



# Search Report

## EIC 1700

STIC Database Tracking Number: 280775

**To: MICHAEL BERNSHTEYN**

**Location: REM-10D25**

**Art Unit: 1796**

**Tuesday, December 16, 2008**

**Case Serial Number: 10/542022**

**From: USHA SHRESTHA**

**Location: EIC1700**

**REM-4B28**

**Phone: (571)272-3519**

**[usha.shrestha@uspto.gov](mailto:usha.shrestha@uspto.gov)**

### Search Notes

Examiner BERNSHTEYN:

Please see the search results, feel free to contact me if you have any questions or if you like to refine the search query. Thank you for using STIC services!

Regards,  
Usha



RUSH

Access DB# 280776



## EIC 1700 SEARCH REQUEST

Today's Date 12/15/2008

Name MICHAEL BERNSHOEYN

AU/Org. 1796 Examiner # 81515

Bld.&Rm.# Rem. 10025 Phone 272-2411

Priority App. Filing Date 01/29/2003

Case/App. # 10/542,022

### Format for Search Results

EMAIL ☒

PAPER ☒

If this is a Board of Appeals case, check here ☐

Synonyms \_\_\_\_\_

Describe this invention in your own words. \_\_\_\_\_

Terms to avoid \_\_\_\_\_

### Additional Comments

Please, try to find a polymer (A1) according claim 1 with the limitations of claims 2-6.

Thank you

M. Bernshoeyn

Please submit completed form to your EIC. SPE Signature here indicates Rush

[Signature]

\*\*\*\*\*

10/542022

Classification: 525/061.000

Status: 30 - DOCKETED NEW CASE - READY FOR EXAMINATION

Title: CROSSLINKED POLYVINYL ACETALS


Examiner: BERNSHTEYN, MICHAEL

Inventor: PAPENFUHS, BERND, et al

GAU: 1796

Bib Data report

**Application Title:** CROSSLINKED POLYVINYL ACETALS

**Application Num:**  (in phx) 10/542022 **Filing Date:** 12/30/2005

**Effective Filing:** 07/11/2005

(Location History) (Foreign/Continuity Data)

**Status:** 30/DOCKETED NEW CASE - READY FOR EXAMINATION **Status Date:** 12/18/2006

**Patent Number:** Not Issued **Issue Date:** N/A **Date of Abandonment:** N/A  
**Confirmation Number:** 8186 **PALM Location:**

**Examiner:** 81515 BERNSHTEYN, MICHAEL (Assignment Data) **Group Art**  
**Unit:** 1796 **Class/Subclass:** 525/061.000

**State or Country:** GERMANY **Sheets/Drawing:** 0 **Total Claims:** 17  
**Independent Claims:** 1

**Inventors:**

| Last name, First name:     | City:        | Country or State: |
|----------------------------|--------------|-------------------|
| <u>PAPENFUHS, BERND</u>    | OBERTSHAUSEN | GERMANY           |
| <u>STEUER, MARTIN</u>      | LIEDERBACH   | GERMANY           |
| <u>GUTWEILER, MATTHIAS</u> | HUENFELDEN   | GERMANY           |

**Attorneys:** ALL **Attorney Docket No:** KURARAY-7

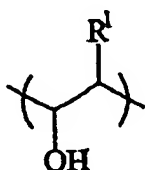
**Interference No:** Lost Case: No **Unmatched Petition:** No **L&R Code:** 1

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Original) Process for the production of cross-linked polyvinyl acetals, in which a polymer (A1) is cross-linked, which, relative to its total weight, contains

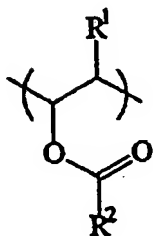
- a) 1.0 to 99.9% by weight of structural units of formula (1)



(1)

in which R¹ means hydrogen or methyl,

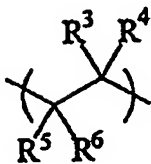
- b) 0 to 99.0% by weight of structural units of formula (2)



(2)

in which R² represents hydrogen or an alkyl radical with 1 to 6 carbon atoms,

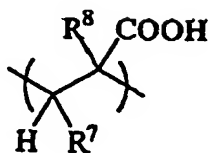
- c) 0 to 70.0% by weight of structural units of formula (3)



(3)

in which R³, R⁴, R⁵ and R⁶, in each case independently of one another, are radicals with a molecular weight in the range of 1 to 500 g/mol,

- d) 0.00001 to 30.0% by weight of structural units of formula (4)



(4)

in which  $R^7$  and  $R^8$ , in each case independently of one another, contain hydrogen, a carboxyl group, an alkyl group with 1 to 10 carbon atoms, which optionally can exhibit one or more COOH groups as substituents, or represents an optionally substituted aryl group with 6 to 12 carbon atoms, characterized in that in any sequence

- (i) Polymer (A1) is reacted with at least one polyaldehyde of formula (5),



in which  $R^9$  represents a bond or a radical that has 1 to 40 carbon atoms, and  $n$  is an integer that is greater than or equal to 2,

and

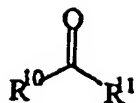
- (ii) Groups of formula (1) and formula (4) are at least partially esterified with one another.

2. (Currently Amended) Process according to claim 1 ~~at least one of the preceding claims~~, wherein a compound (5) with  $n = 2$  or  $3$  is used.

3. (Currently Amended) Process according to claim 1 ~~at least one of the preceding claims~~, wherein a compound (5) is used, in which  $R^9$  is an aliphatic, cycloaliphatic and/or aromatic group with 1 to 12 carbon atoms.

4. (Currently Amended) Process according to claim 1 ~~at least one of the preceding claims~~, wherein glutaric dialdehyde and/or  $n$ -nonanedial is used as compound (5).

5. (Currently Amended) Process according to claim 1 ~~at least one of the preceding claims~~, wherein at any time, at least one compound of formula (6) is added,



(6)

in which  $\text{R}^{10}$  and  $\text{R}^{11}$ , in each case independently of one another, are hydrogen, an alkyl group with 1 to 10 carbon atoms or an optionally substituted aryl group with 6 to 12 carbon atoms.

6. (Original) Process according to claim 5, wherein n-butyraldehyde is used as compound (6).

7. (Currently Amended) Process according to claim 5 ~~and/or~~ 6, wherein

(1) 95.00 to 99.99 parts by weight of at least one compound (6)

(2) 0.01 to 5.00 parts by weight of at least one polyaldehyde (5)

are used, whereby the indicated parts by weight are supplemented up to 100.00 parts by weight.

8. (Currently Amended) Process according to claim 1 ~~at least one of the preceding claims~~, wherein esterification (ii), optionally in the presence of at least one softener, is performed at mass temperatures in the range of 80 to 280°C.

9. (Original) Process according to claim 8, wherein the cross-linking is performed in an extruder, a kneading aggregate or another heatable aggregate.

10. (Currently Amended) Cross-linked polyvinyl acetal that can be obtained by a process according to claim 1 ~~at least one of the preceding claims~~.

11. (Original) Polyvinyl acetal according to claim 10, wherein its total content of esterified and non-esterified carboxyl groups is less than or equal to 10.0% by weight, relative to the total weight of the polyvinyl acetal.

12. (Currently Amended) Polyvinyl acetal according to claim 10 ~~and/or~~ 11, wherein it contains a softener.

13. (Currently Amended) Molding compound that contains a polyvinyl acetal according to claim 10 ~~at least one of claims 10 to 12.~~

14. (Currently Amended) Film that contains a polyvinyl acetal according to claim 10 ~~at least one of claims 10 to 12.~~

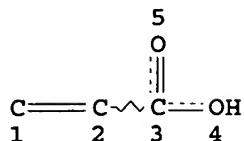
15. (Original) Use of a film according to claim 14 for the production of laminated safety glasses.

16. (Currently Amended) Coating that contains a polyvinyl acetal according to claim 10 ~~at least one of claims 10 to 12.~~

17. (Currently Amended) Use of a polyvinyl acetal according to claim 10 ~~at least one of claims 10 to 12~~ for the production of ion-conductive intermediate layers for eletrochromic systems.

=&gt; d que 174

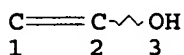
L2 2 SEA FILE=REGISTRY ABB=ON PLU=ON (111-30-8/BI OR 51651-40-2/BI)  
 L7 STR



NODE ATTRIBUTES:  
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 5

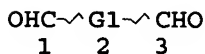
STEREO ATTRIBUTES: NONE  
 L9 SCR 2043  
 L11 STR



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
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 NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE  
 L13 962 SEA FILE=REGISTRY SSS FUL L11 AND L7 AND L9  
 L15 STR



VAR G1=AK/CY  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE  
 L17 6 SEA FILE=REGISTRY SUB=L13 SSS FUL L15  
 L18 956 SEA FILE=REGISTRY ABB=ON PLU=ON L13 NOT L17  
 L19 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L17  
 L20 1924 SEA FILE=HCAPLUS ABB=ON PLU=ON L18  
 L21 12977 SEA FILE=HCAPLUS ABB=ON PLU=ON L2  
 L22 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND L21  
 L26 23508 SEA FILE=HCAPLUS ABB=ON PLU=ON "ALDEHYDES, REACTIONS"+PFT  
 ,NT/CT  
 L32 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND (1840-2003)/PRY;AY



,PY  
L33 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 AND (1840-2003)/PRY,AY  
,PY  
L34 19020 SEA FILE=HCAPLUS ABB=ON PLU=ON "POLYVINYL ACETALS"+PFT,NT  
/CT  
L35 23 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 AND L26  
L37 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L35 AND (CROSSLINK? OR  
CROSS LINK?)  
L38 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L37 AND (1840-2003)/PRY,AY  
,PY  
L39 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L32 OR L33 OR L38  
L47 448 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 (L) (CROSSLINK? OR  
CROSS LINK?)  
L49 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 AND L21  
L50 29 SEA FILE=HCAPLUS ABB=ON PLU=ON L49 AND (1840-2003)/PRY,AY  
,PY  
L51 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L50 AND POLYMER?/SC, SX  
L52 23 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 OR L39  
L54 1 SEA FILE=REGISTRY ABB=ON PLU=ON "GLUTARIC DIALDEHYDE"/CN  
  
L55 1 SEA FILE=REGISTRY ABB=ON PLU=ON NONANEDIAL/CN  
L56 1 SEA FILE=REGISTRY ABB=ON PLU=ON BUTYRALDEHYDE/CN  
L58 26576 SEA FILE=HCAPLUS ABB=ON PLU=ON (L54 OR L55 OR L56)  
L59 QUE ABB=ON PLU=ON GLUTARIC DIALDEHYD? OR NONANEDIAL? O  
R BUTYRALDEHYD?  
L60 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND L58  
L61 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L60 AND L59  
L62 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L60 OR L61  
L63 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L62 AND (CROSSLINK? OR  
CROSS LINK?)  
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L65 13 SEA FILE=HCAPLUS ABB=ON PLU=ON L64 AND (1840-2003)/PRY,AY  
,PY  
L67 698 SEA FILE=REGISTRY ABB=ON PLU=ON 111-30-8/CRN  
L68 2 SEA FILE=REGISTRY ABB=ON PLU=ON 51651-40-2/CRN  
L69 263 SEA FILE=REGISTRY ABB=ON PLU=ON 123-72-8/CRN  
L70 7 SEA FILE=REGISTRY ABB=ON PLU=ON L13 AND ((L67 OR L68 OR  
L69))  
L71 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L70  
L72 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L71 AND (1840-2003)/PRY,AY  
,PY  
L73 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L65 OR L72  
L74 29 SEA FILE=HCAPLUS ABB=ON PLU=ON L73 OR L52

=> d 174 1-29 ibib ed abs hitstr hitind

L74 ANSWER 1 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:908753 HCAPLUS

DOCUMENT NUMBER: 146:9199

TITLE: Manufacturing method for poly(vinyl alcohol)  
fibers having high strength and excellent hot  
water resistance for tire cords

INVENTOR(S): Choi, Soo Myung; Kim, Hak Sung; Kwon, Ik Hyeon;  
Park, Sung Ho

PATENT ASSIGNEE(S): Hyosung Corporation, S. Korea

SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given  
CODEN: KRXXA7

DOCUMENT TYPE: Patent

LANGUAGE: Korean

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| KR 2005041003 | A    | 20050504 | KR 2003-75864   | 20031029 |

PRIORITY APPLN. INFO.:

KR 2003-75864 20031029

ED Entered STN: 07 Sep 2006

AB Raw cords are obtained by preparing poly(vinyl alc.) (I) having d.p. 1500-7000 and saponification degree >99.9 mol%, dissolving I in DMSO, spinning the solution with a dry and wet type or a wet type, drawing the yarns at a high drawing rate, heating the drawn yarns, twisting the drawn yarns to manufacture the first twisted yarns, twisting two or three threads of the first twisted yarns in an opposite direction of the first twist to manufacture a raw cord, adding 1-30% alcs. to a **crosslinking** aqueous solution containing an aromatic aldehyde and an acid catalyst, and then **crosslinking** the raw cord in the solution with 0.5-2.0% aromatic aldehydes. A tire cord is obtained by treating the **crosslinked** raw cord with an adhering liquid

IC ICM D01F006-14

CC 39-13 (Synthetic Elastomers and Natural Rubber)

Section cross-reference(s): 40

ST polyvinyl alc **crosslinking** vinal fiber tire cordIT **Aldehydes, reactions**

(aromatic; poly(vinyl alc.) fibers having high strength and excellent hot water resistance for tire cords)

IT **Polyvinyl acetals**

(aromatic; poly(vinyl alc.) fibers having high strength and excellent hot water resistance for tire cords)

IT **Crosslinking agents**

Tire cords

(poly(vinyl alc.) fibers having high strength and excellent hot water resistance for tire cords)

L74 ANSWER 2 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:181370 HCAPLUS

DOCUMENT NUMBER: 142:241831

TITLE: Vinyl alcohol polymer-based porous granular gels and their manufacture

INVENTOR(S): Yamamoto, Hideki; Kushida, Akihiro

PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2005054148 | A    | 20050303 | JP 2003-289144  | 20030807 |

PRIORITY APPLN. INFO.:

JP 2003-289144 20030807

ED Entered STN: 04 Mar 2005

AB Vinyl alc. polymer-based porous granular gels having hollow insides, useful as materials for microbial immobilization, waste treatment, water holding, etc., are manufactured Thus, an aqueous solution containing Na

alginate (0.7 g/100 mL) was dropped into an aqueous solution of  $\text{CaCl}_2$  (0.1 mol/L) to give Ca alginate gel core particles (average size 4 mm), which were immersed into an aqueous solution of  $\text{CaCl}_2$  (0.1 mol/L) for penetration of the solution into the core particles, immersed into a solution containing poly(vinyl alc.) and Na alginate to form gel layers at the outside of the core particles, washed with water, immersed into an aqueous  $\text{CaCl}_2$  solution, and **crosslinked** by immersion into a solution containing  $\text{HCHO}$ ,  $\text{Na}_2\text{SO}_4$ , and  $\text{H}_2\text{SO}_4$ , the **crosslinked** particles were immersed into an aqueous NaOH solution at  $60^\circ$  for dissoln. of the cores, and washed to give poly(vinyl alc.)-based porous granular gels (particle size 6 mm) having hollow insides.

- IC ICM C08J009-26
- ICS C08L029-04
- CC 38-3 (Plastics Fabrication and Uses)
- ST vinyl alc polymer porous granular gel; hollow granular gel  
**crosslinked** polyvinyl alc; alginate calcium polyvinyl alc gel  
manuf
- IT Acids, uses  
(**crosslinking** accelerators; manufacture of **crosslinked**  
vinyl alc. polymer-based porous granular gels having hollow  
insides)
- IT Aldehydes, reactions  
(**crosslinking** agents; manufacture of **crosslinked**  
vinyl alc. polymer-based porous granular gels having hollow  
insides)
- IT Polyvinyl acetals  
(formals; manufacture of **crosslinked** vinyl alc. polymer-based  
porous granular gels having hollow insides)
- IT Gelatins, uses  
(gel-forming, in preparation of hollow insides; manufacture of  
**crosslinked** vinyl alc. polymer-based porous granular gels  
having hollow insides)
- IT **Crosslinking**  
Crosslinking agents  
Crosslinking catalysts  
Hydrogels  
Sol-gel processing  
(manufacture of **crosslinked** vinyl alc. polymer-based porous  
granular gels having hollow insides)
- IT Polyvinyl acetals  
(manufacture of **crosslinked** vinyl alc. polymer-based porous  
granular gels having hollow insides)
- IT Polysaccharides, uses  
(water-sol, gel-forming, in preparation of hollow insides; manufacture of  
**crosslinked** vinyl alc. polymer-based porous granular gels  
having hollow insides)
- IT 7664-93-9, Sulfuric acid, uses  
(**crosslinking** accelerator; manufacture of **crosslinked**  
vinyl alc. polymer-based porous granular gels having hollow  
insides)
- IT 50-00-0, Formaldehyde, reactions 75-07-0, Acetaldehyde, reactions  
(**crosslinking** agent; manufacture of **crosslinked**  
vinyl alc. polymer-based porous granular gels having hollow  
insides)
- IT 9005-38-3, Sodium alginate  
(gel-forming, in preparation of hollow insides; manufacture of  
**crosslinked** vinyl alc. polymer-based porous granular gels  
having hollow insides)
- IT 1310-73-2, Sodium hydroxide, uses  
(in preparation of hollow insides; manufacture of **crosslinked** vinyl

alc. polymer-based porous granular gels having hollow insides)  
 IT 9002-89-5, Poly(vinyl alcohol)  
 (manufacture of crosslinked vinyl alc. polymer-based porous  
 granular gels having hollow insides)  
 IT 10043-52-4, Calcium chloride, uses  
 (polysaccharide gel-forming, in preparation of hollow insides; manufacture  
 of  
 crosslinked vinyl alc. polymer-based porous granular gels  
 having hollow insides)

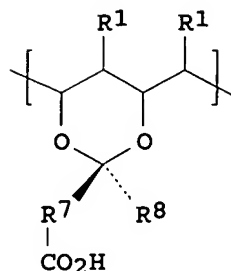
L74 ANSWER 3 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:587942 HCAPLUS  
 DOCUMENT NUMBER: 141:124156  
 TITLE: Crosslinking of poly(vinyl acetals)  
 INVENTOR(S): Papenfuhs, Bernd; Steuer, Martin; Gutweiler,  
 Matthias  
 PATENT ASSIGNEE(S): Kuraray Specialities Europe GmbH, Germany  
 SOURCE: Ger. Offen., 12 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE        |
|---|------|----------|------------------|-------------|
| DE 10319201   | A1   | 20040722 | DE 2003-10319201 | 20030429    |
|   |      |          | <--              |             |
| WO 2004063231   | A1   | 20040729 | WO 2003-EP14109  | 20031212    |
|   |      |          | <--              |             |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,<br>CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,<br>GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,<br>KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,<br>MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,<br>SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,<br>VN, YU, ZA, ZM, ZW<br>RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,<br>AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE,<br>DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,<br>SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,<br>MR, NE, SN, TD, TG |      |          |                  |             |
| AU 2003294838   | A1   | 20040810 | AU 2003-294838   | 20031212    |
|   |      |          | <--              |             |
| BR 2003017977   | A    | 20051206 | BR 2003-17977    | 20031212    |
|   |      |          | <--              |             |
| EP 1622946  | A1   | 20060208 | EP 2003-785800   | 20031212    |
|   |      |          | <--              |             |
| CN 1759125  | A    | 20060412 | CN 2003-80110133 | 20031212    |
|   |      |          | <--              |             |
| CN 100343288  | C    | 20071017 |                  |             |
| JP 2006513284   | T    | 20060420 | JP 2004-565965   | 20031212    |
|   |      |          | <--              |             |
| US 20060052533  | A1   | 20060309 | US 2005-542019   | 20050711    |
|   |      |          | <--              |             |
| PRIORITY APPLN. INFO.:  |      |          | DE 2003-10300321 | IA 20030109 |
|   |      |          | <--              |             |
|   |      |          | DE 2003-10319201 | A 20030429  |
|   |      |          | <--              |             |
|   |      |          | WO 2003-EP14109  | W 20031212  |

ED Entered STN: 23 Jul 2004  
GI

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AB The poly(vinyl acetals) are crosslinked by reacting a polymer containing structural units (1)  $\text{CHOHCHR}_1$  ( $\text{R}_1 = \text{H, Me}$ ), i.e., poly(vinyl alc.) or poly(propenyl alc.), and optionally structural units (2)  $\text{CHO}_2\text{CR}_2\text{CHR}_1$  ( $\text{R}_2 = \text{H, C1-6 alkyl}$ ), (3)  $\text{CR}_5\text{R}_6\text{CR}_3\text{R}_4$  ( $\text{R}_3\text{-R}_6 =$  residues with mol. weight 1-500 g/mol) and acetal units I [ $\text{R}_7 =$  bond, C1-10 alkylene, (un)substituted C6-12 arylene;  $\text{R}_8 = \text{H, CO}_2\text{H, C1-10 alkyl, (un)substituted C6-12 aryl}$ ] with a polyaldehyde  $\text{R}_9(\text{CHO})_n$  ( $\text{R}_9 =$  C1-40 residue;  $n \geq 2$ ), e.g., pentanedial or nonanedial, and with esterification of structural units (1) with structural units I. The crosslinked poly(vinyl acetals) are useful for manufacture of plastic films, laminated safety glass, for coatings and as ion-conductive intermediate layers for electrochromic systems (no examples).

IT 111-30-8, Glutardialdehyde 51651-40-2,  
1,9-Nonanedial  
(crosslinking agent; crosslinking of poly(vinyl acetals) with polyaldehydes)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

$\text{OHC}-(\text{CH}_2)_3-\text{CHO}$

RN 51651-40-2 HCAPLUS  
CN Nonanedial (CA INDEX NAME)

$\text{OHC}-(\text{CH}_2)_7-\text{CHO}$

IC ICM C08F008-28  
ICS C08F008-14; C08F016-00

CC 35-8 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 38, 74, 76

ST polyvinyl acetal crosslinking polyaldehyde; dialdehyde  
crosslinking agent polyvinyl acetal

IT Windshields  
(automotive; crosslinking of poly(vinyl acetals) with polyaldehydes)

IT Coating materials  
Crosslinking

Plastic films  
 (crosslinking of poly(vinyl acetals) with polyaldehydes)  
 IT Polyvinyl acetals  
 (crosslinking of poly(vinyl acetals) with polyaldehydes)  
 IT Safety glass  
 (laminated safety glass; crosslinking of poly(vinyl  
 acetals) with polyaldehydes)  
 IT Crosslinking agents  
 (polyaldehydes; crosslinking of poly(vinyl acetals) with)  
 IT Aldehydes, reactions  
 (polyfunctional, crosslinking agents;  
 crosslinking of poly(vinyl acetals) with)  
 IT Laminated glass  
 (safety glass; crosslinking of poly(vinyl acetals) with  
 polyaldehydes)  
 IT 111-30-8, Glutardialdehyde 51651-40-2,  
 1,9-Nonanedial  
 (crosslinking agent; crosslinking of poly(vinyl  
 acetals) with polyaldehydes)  
 IT 9002-89-5, Poly(vinyl alcohol) 28388-89-8, Poly(propenyl alcohol)  
 (crosslinking of poly(vinyl acetals) with polyaldehydes)

L74 ANSWER 4 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:587941 HCAPLUS

DOCUMENT NUMBER: 141:124155

TITLE: Crosslinking of poly(vinyl acetals)

INVENTOR(S): Papenfuhs, Bernd; Steuer, Martin; Gutweiler,  
 Matthias

PATENT ASSIGNEE(S): Kuraray Specialities Europe GmbH, Germany

SOURCE: Ger. Offen., 9 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
|---|------|----------|------------------|----------|
| DE 10319199   | A1   | 20040722 | DE 2003-10319199 | 20030429 |
|   |      |          | <--              |          |
| WO 2004063232   | A1   | 20040729 | WO 2003-EP14110  | 20031212 |
|   |      |          | <--              |          |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,<br>CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,<br>GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,<br>KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,<br>MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,<br>SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,<br>VN, YU, ZA, ZM, ZW<br>RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,<br>AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE,<br>DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,<br>SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,<br>MR, NE, SN, TD, TG |      |          |                  |          |
| AU 2003293853   | A1   | 20040810 | AU 2003-293853   | 20031212 |
|   |      |          | <--              |          |
| EP 1606325  | A1   | 20051221 | EP 2003-789238   | 20031212 |
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| EP 1606325  | B1   | 20080305 |                  |          |
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PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  
 JP 2006513285 T 20060420 JP 2004-565966 20031212  
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 AT 388170 T 20080315 AT 2003-789238 20031212  
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 US 20060205871 A1 20060914 US 2005-542022 20051230  
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 PRIORITY APPLN. INFO.: DE 2003-10300320 IA 20030109  
 <--  
 DE 2003-10319199 A 20030429  
 <--  
 WO 2003-EP14110 W 20031212  
 <--

ED Entered STN: 23 Jul 2004

AB The poly(vinyl acetals) are crosslinked by reacting a polymer containing structural units (1) CHOHR1 (R1 = H, Me) and optionally structural units (2) CHO2CR2CHR1 (R2 = H, C1-6 alkyl), (3) CR5R6CR3R4 (R3-R6 = residues with mol. weight 1-500 g/mol) and (4) CHR7CR8CO2H [R7, R8 = H, carboxyl, C1-10 (carboxy-substituted) alkyl, (un)substituted C6-12 aryl] with a polyaldehyde R9(CHO)n (R9 = C1-40 residue; n ≥ 2), e.g., pentanedial or nonanedial, and with esterification of structural units (1) with structural units (4). The crosslinked poly(vinyl acetals) are useful for manufacture of plastic films, laminated safety glass, for coatings and as ion-conductive intermediate layers for electrochromic systems (no examples).

IT 111-30-8, Glutardialdehyde 51651-40-2,  
 1,9-Nonanedial  
 (crosslinking agent; crosslinking of poly(vinyl acetals) with polyaldehydes)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

RN 51651-40-2 HCAPLUS

CN Nonanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>7</sub>-CHO

IC ICM C08F008-28

ICS C08F008-14; C08F016-00

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 38, 74, 76

ST polyvinyl acetal crosslinking polyaldehyde; dialdehyde crosslinking agent polyvinyl acetal

IT Windshields

(automotive; crosslinking of poly(vinyl acetals) with polyaldehydes)

IT Polyvinyl acetals

(crosslinked; crosslinking of poly(vinyl acetals) with polyaldehydes)

IT Coating materials

Crosslinking

Plastic films

(crosslinking of poly(vinyl acetals) with polyaldehydes)

IT Safety glass  
 (laminated safety glass; crosslinking of poly(vinyl acetals) with polyaldehydes)

IT Crosslinking agents  
 (polyaldehydes; crosslinking of poly(vinyl acetals) with)

IT Aldehydes, reactions  
 (polyfunctional, crosslinking agents;  
 crosslinking of poly(vinyl acetals) with)

IT Laminated glass  
 (safety glass; crosslinking of poly(vinyl acetals) with polyaldehydes)

IT 111-30-8, Glutardialdehyde 51651-40-2,  
 1,9-Nonanedial  
 (crosslinking agent; crosslinking of poly(vinyl acetals) with polyaldehydes)

L74 ANSWER 5 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:203869 HCAPLUS

DOCUMENT NUMBER: 140:236562

TITLE: Heat-sensitive materials and their use in chemically resistant positive working lithographic printing plate precursors

INVENTOR(S): Timpe, Hans-Joachim; Mueller, Ursula; Savariar-Hauck, Celin

PATENT ASSIGNEE(S): Kodak Polychrome Graphics G.m.b.H., Germany

SOURCE: PCT Int. Appl., 37 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
|---|------|----------|------------------|----------|
| WO 2004020484   | A1   | 20040311 | WO 2003-EP9550   | 20030828 |
| <--   |      |          |                  |          |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |      |          |                  |          |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  |      |          |                  |          |
| DE 10239505   | A1   | 20040408 | DE 2002-10239505 | 20020828 |
| <--   |      |          |                  |          |
| DE 10239505   | B4   | 20050504 |                  |          |
| AU 2003255494   | A1   | 20040319 | AU 2003-255494   | 20030828 |
| <--   |      |          |                  |          |
| EP 1543046  | A1   | 20050622 | EP 2003-790933   | 20030828 |
| <--   |      |          |                  |          |
| EP 1543046  | B1   | 20060510 |                  |          |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK   |      |          |                  |          |
| US 20060130689  | A1   | 20060622 | US 2006-526138   | 20060130 |
| <--   |      |          |                  |          |



PRIORITY APPLN. INFO.:

DE 2002-10239505

A 20020828

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WO 2003-EP9550

W 20030828

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ED Entered STN: 14 Mar 2004

AB Heat-sensitive element comprises (a) an optionally pre-treated substrate (b) a pos. working heat-sensitive coating comprising (i) at least one novolak resin, (ii) at least one component which reduces the aqueous alkaline developer solubility of novolak, wherein said reduction in solubility is

reversed upon the application of heat, and (iii) at least one acidic polyvinyl acetal, wherein components (i) and (ii) do not have to be present as sep. substances but may be used in the form of an appropriately functionalized novolak. A coating composition contained Alnovol SPN 452, a reaction product of hydrolyzed Mowiol 10/98, propionaldehyde, and 4-formyl benzoic acid, 3-mercapto-1,2,4-triazole, N-benzyl quinolinium bromide, crystal violet, and 2-[2-[2-thiophenyl-3-[2-(1,3-dihydro-1,3,3-trimethyl-2H-indole-2-ylidene)ethylidene]-1-cyclohexene-1-yl]ethenyl]-1,3,3-trimethyl-3H-indolium chloride.

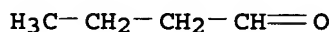
IT 123-72-8P, Butyraldehyde 37768-21-1DP,

Acrylic acid-vinyl acetate-vinyl alcohol copolymer, cyclic acetals with aldehydes

(heat-sensitive materials and their use in chemical resistant pos. working lithog. printing plate precursors)

RN 123-72-8 HCAPLUS

CN Butanal (CA INDEX NAME)



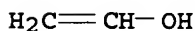
RN 37768-21-1 HCAPLUS

CN 2-Propenoic acid, polymer with ethenol and ethenyl acetate (CA INDEX NAME)

CM 1

CRN 557-75-5

CMF C2 H4 O



CM 2

CRN 108-05-4

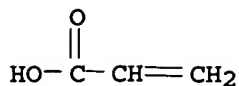
CMF C4 H6 O2



CM 3

CRN 79-10-7

CMF C3 H4 O2



IC ICM C08F008-14  
ICS C08L029-14; C08F008-28; C08K005-06; B41C001-10; B41M005-36;  
B41M005-40

CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 74

IT 75-07-0P, Acetaldehyde, preparation 123-38-6DP, Propionaldehyde,  
cyclic acetals with polyvinyl alcs. 123-72-8P,  
Butyraldehyde 619-66-9DP, 4-Formyl benzoic acid, cyclic  
acetals with polyvinyl alcs. 3977-29-5DP, 6-Methylisocytosine,  
reaction products with isophorone diisocyanate and Alnovol SPN 564  
4098-71-9DP, Isophorone diisocyanate, reaction products with  
6-methylisocytosine and Alnovol SPN 564 9002-89-5DP, Mowiol 10/98,  
hydrolyzed, cyclic acetals with aldehydes 9002-89-5DP, Mowiol 5/88,  
hydrolyzed, reaction products with butyraldehyde and  
4-benzene sulfonamide butyraldehyde di-Et acetal  
37768-21-1DP, Acrylic acid-vinyl acetate-vinyl alcohol  
copolymer, cyclic acetals with aldehydes 124874-16-4DP, Toluene  
sulfonylisocyanate, reaction products with Mowital B70H  
668260-95-5DP, reaction products with Mowital 5/88  
(heat-sensitive materials and their use in chemical resistant pos.  
working lithog. printing plate precursors)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L74 ANSWER 6 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:1006900 HCAPLUS

DOCUMENT NUMBER: 140:31135

TITLE: Method of purifying Fischer-Tropsch derived water

INVENTOR(S): Dancuart Kohler, Luis Pablo Fidel; Du Plessis,  
Gert Hendrik; Du Toit, Francois Jacobus; Koper,  
Edward Ludovicus; Phillips, Trevor David; Van Der  
Walt Janette

PATENT ASSIGNEE(S): Sasol Technology (Pty) Ltd., S. Afr.; Dancuart  
Kohler, Luis Pablo Fidel

SOURCE: PCT Int. Appl., 30 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| WO 2003106349 | A1   | 20031224 | WO 2003-ZA79    | 20030618 |

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CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,  
SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,  
ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
 NE, SN, TD, TG

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|------------------------|----|----------|-----------------|------------|
| NL 1023691             | A1 | 20031219 | NL 2003-1023691 | 20030618   |
|                        |    |          | <--             |            |
| NL 1023691             | C2 | 20040218 |                 |            |
| AU 2003276161          | A1 | 20031231 | AU 2003-276161  | 20030618   |
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| GB 2391225             | A  | 20040204 | GB 2003-14071   | 20030618   |
|                        |    |          | <--             |            |
| GB 2391225             | B  | 20051026 |                 |            |
| BR 2003011914          | A  | 20050426 | BR 2003-11914   | 20030618   |
|                        |    |          | <--             |            |
| CN 1662455             | A  | 20050831 | CN 2003-814083  | 20030618   |
|                        |    |          | <--             |            |
| CN 1312051             | C  | 20070425 |                 |            |
| JP 2006514579          | T  | 20060511 | JP 2004-513186  | 20030618   |
|                        |    |          | <--             |            |
| RU 2328457             | C2 | 20080710 | RU 2004-138562  | 20030618   |
|                        |    |          | <--             |            |
| US 20050139555         | A1 | 20050630 | US 2004-15308   | 20041216   |
|                        |    |          | <--             |            |
| US 7153432             | B2 | 20061226 |                 |            |
| NO 2005000251          | A  | 20050318 | NO 2005-251     | 20050117   |
|                        |    |          | <--             |            |
| ZA 2005000398          | A  | 20060531 | ZA 2005-398     | 20050117   |
|                        |    |          | <--             |            |
| PRIORITY APPLN. INFO.: |    |          | US 2002-389653P | P 20020618 |
|                        |    |          | <--             |            |
|                        |    |          | ZA 2002-4846    | A 20020618 |
|                        |    |          | <--             |            |
|                        |    |          | WO 2003-ZA79    | W 20030618 |
|                        |    |          | <--             |            |

ED Entered STN: 26 Dec 2003

AB A process for the production of highly purified water from Fischer-Tropsch reaction water, includes at least the steps of a primary treatment stage comprising an equilibrium staged separation process having at least one stage for removing at least a fraction of non-acid oxygenated hydrocarbons from the Fischer-Tropsch reaction water to produce a primary water-enriched stream, a secondary treatment stage comprising at least one membrane separation process for removing at least some suspended solids and acidic oxygenated hydrocarbons from at least a portion of the primary water-enriched stream to produce a secondary water-enriched stream and a tertiary treatment stage comprising a dissolved salt and organic removal stage for removing at least some dissolved salts and organic constituents from at least a portion of the secondary water-enriched stream. The method allows recovery of pure water from wastewaters containing volatile organic compds., aldehydes, ketones, alcs., organic acids, and solids from the reactants and the catalyst.

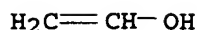
IT 26299-60-5, Acrylic acid-vinyl alcohol copolymer  
 (membrane; purification of wastewaters from the Fischer-Tropsch process for recovery of potable water)

RN 26299-60-5 HCAPLUS

CN 2-Propenoic acid, polymer with ethenol (CA INDEX NAME)

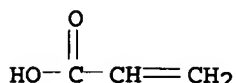
CM 1

CRN 557-75-5  
CMF C2 H4 O

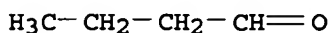


CM 2

CRN 79-10-7  
CMF C3 H4 O2



IT 123-72-8, Butyraldehyde  
(purification of wastewaters from the Fischer-Tropsch process for  
recovery of potable water)  
RN 123-72-8 HCAPLUS  
CN Butanal (CA INDEX NAME)



IC ICM C02F001-44  
ICS C02F009-02; C02F101-32; C02F101-34  
CC 61-5 (Water)  
Section cross-reference(s): 51, 60  
IT 9002-89-5, Polyvinyl alcohol  
(crosslinked, membrane; purification of wastewaters from the  
Fischer-Tropsch process for recovery of potable water)  
IT 9003-07-0, Polypropylene 25667-42-9, Poly ether sulfone  
26299-60-5, Acrylic acid-vinyl alcohol copolymer  
(membrane; purification of wastewaters from the Fischer-Tropsch process  
for recovery of potable water)  
IT 64-17-5, Ethanol, processes 64-18-6, Formic acid, processes  
64-19-7, Acetic acid, processes 67-56-1, Methanol, processes  
67-64-1, Acetone, processes 75-07-0, Acetaldehyde, processes  
79-09-4, Propionic acid, processes 107-87-9, Methyl propyl ketone  
107-92-6, Butyric acid, processes 109-52-4, Valeric acid, processes  
111-14-8, Heptanoic acid 123-38-6, Propionaldehyde, processes  
123-72-8, Butyraldehyde 124-07-2, Octanoic acid,  
processes 142-62-1, Hexanoic acid, processes 25917-35-5, Hexanol  
30899-19-5, Pentanol 35296-72-1, Butanol 53535-33-4, Heptanol  
62309-51-7, Propanol  
(purification of wastewaters from the Fischer-Tropsch process for  
recovery of potable water)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L74 ANSWER 7 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2001:713193 HCAPLUS  
DOCUMENT NUMBER: 135:262307  
TITLE: Polymer-based injectable and swellable

INVENTOR(S): microspheres for tissue bulking  
 Vogel, Jean-Marie; Boschetti, Egisto  
 PATENT ASSIGNEE(S): Biosphere Medical, Inc., USA  
 SOURCE: PCT Int. Appl., 34 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| WO 2001070289 | A2   | 20010927 | WO 2001-US8405  | 20010315 |

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|               |    |          |  |  |
|---------------|----|----------|--|--|
| WO 2001070289 | A3 | 20020627 |  |  |
|---------------|----|----------|--|--|

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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

|            |    |          |                |          |
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| EP 1274472 | A2 | 20030115 | EP 2001-922415 | 20010315 |
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRIORITY APPLN. INFO.:

|                |   |          |
|----------------|---|----------|
| US 2000-528989 | A | 20000320 |
|----------------|---|----------|

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|                |   |          |
|----------------|---|----------|
| WO 2001-US8405 | W | 20010315 |
|----------------|---|----------|

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ED Entered STN: 28 Sep 2001

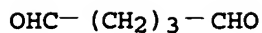
AB The present invention relates to injectable compns. comprising biocompatible, swellable, hydrophilic, non-toxic and substantially spherical microspheres useful for tissue bulking. The invention also relates to methods of tissue bulking, particularly for the treatment of gastro-esophageal reflux disease, urinary incontinence, or urinary reflux disease, using the injectable compns. For example, microspheres were prepared from (a) 58 g of sodium chloride and 27 g of sodium acetate in 100 mL of water, (b) 400 mL of glycerol, (c) monomers, i.e, 90 g of N-tris-hydroxymethylmethacrylamide, 35 mg of diethylaminoethylacrylamide and 10 g of N,N-methylenebis-acrylamide, and (d) gelatin, under heating at 60-70°. The total volume of the mixture was adjusted to 980 mL by addition of hot water and then 20 mL of a 70 mg/mL ammonium persulfate solution and 4 mL of N,N,N',N'-tetramethylethylenediamine were added. This solution was poured into paraffin oil at 50-70° under stirring. After a few minutes, the polymerization reaction of acrylic monomers is manifested by an increase of temperature. The microspheres are then recovered by decanting, washed carefully, screened and sterilized in an autoclave in a buffered medium. The microspheres, after screen calibration, possess the characteristics desired for dermal augmentation, including a marked cationic charge and an effective adhesion agent (gelatin or denatured collagen).

IT 111-30-8, Glutaraldehyde

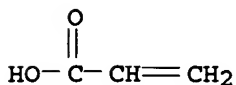
(crosslinking agent; preparation of polymeric injectable and swellable microspheres for tissue bulking)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

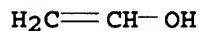


IT 58374-38-2, Sodium acrylate-vinyl alcohol copolymer  
 (preparation of polymeric injectable and swellable microspheres for  
 tissue bulking)  
 RN 58374-38-2 HCAPLUS  
 CN 2-Propenoic acid, sodium salt (1:1), polymer with ethenol (CA INDEX  
 NAME)  
 CM 1  
 CRN 7446-81-3  
 CMF C3 H4 O2 . Na



● Na

CM 2  
 CRN 557-75-5  
 CMF C2 H4 O



IC ICM A61L027-38  
 ICS A61L027-54; A61L031-00; A61L031-16  
 CC 63-7 (Pharmaceuticals)  
 IT Anti-inflammatory agents  
 Antibacterial agents  
 Antihistamines  
 Biocompatibility  
 Crosslinking agents  
 Swelling, physical  
 (preparation of polymeric injectable and swellable microspheres for  
 tissue bulking)  
 IT 9003-04-7, Sodium polyacrylate  
 (crosslinked; preparation of polymeric injectable and  
 swellable microspheres for tissue bulking)  
 IT 111-30-8, Glutaraldehyde  
 (crosslinking agent; preparation of polymeric injectable and  
 swellable microspheres for tissue bulking)  
 IT 79-06-1D, Acrylamide, derivs., polymers 79-10-7D, Acrylic acid,  
 esters, copolymers with vinyl acetate 108-05-4D, Vinyl acetate,  
 copolymers with acrylic acid esters 127-09-3, Sodium acetate  
 1309-38-2, Magnetite (Fe3O4), biological studies 7439-89-6D, Iron,  
 salts, biological studies 7439-95-4D, Magnesium, salts, biological  
 studies 7440-09-7D, Potassium, salts, biological studies

7440-23-5D, Sodium, salts, biological studies 7440-66-6D, Zinc, salts, biological studies 7440-70-2D, Calcium, salts, biological studies 7647-14-5, Sodium chloride, biological studies 7727-43-7, Barium sulfate 7727-54-0, Ammonium persulfate 9003-05-8, Acrylamide polymer 9003-53-6, Polystyrene 25549-84-2, Sodium acrylate polymer 25969-89-5, Methyl maleate-vinyl acetate copolymer 26426-80-2, Isobutylene-maleic anhydride copolymer 58374-38-2, Sodium acrylate-vinyl alcohol copolymer 59017-50-4D, acyl derivs. 107830-79-5, Starch-acrylonitrile graft copolymer 944130-99-8, Rhodamine isothiocyanate  
(preparation of polymeric injectable and swellable microspheres for tissue bulking)

L74 ANSWER 8 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:713087 HCAPLUS

DOCUMENT NUMBER: 135:262302

TITLE: Polymer-based injectable and swellable microspheres for dermal augmentation

INVENTOR(S): Vogel, Jean-Marie; Boschetti, Egisto

PATENT ASSIGNEE(S): Biosphere Medical, Inc., USA

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE        |
|---|------|----------|-----------------|-------------|
| WO 2001070132   | A2   | 20010927 | WO 2001-US8406  | 20010315    |
| <--   |      |          |                 |             |
| WO 2001070132   | A3   | 20020523 |                 |             |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW |      |          |                 |             |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  |      |          |                 |             |
| US 6436424  | B1   | 20020820 | US 2000-528990  | 20000320    |
| <--   |      |          |                 |             |
| EP 1267747  | A2   | 20030102 | EP 2001-916695  | 20010315    |
| <--   |      |          |                 |             |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR   |      |          |                 |             |
| US 20020197326  | A1   | 20021226 | US 2002-222819  | 20020819    |
| <--   |      |          |                 |             |
| US 6790456  | B2   | 20040914 |                 |             |
| US 20050025708  | A1   | 20050203 | US 2004-919257  | 20040817    |
| <--   |      |          |                 |             |
| PRIORITY APPLN. INFO.:  |      |          | US 2000-528990  | A 20000320  |
| <--   |      |          |                 |             |
|   |      |          | WO 2001-US8406  | W 20010315  |
| <--   |      |          |                 |             |
|   |      |          | US 2002-222819  | A1 20020819 |
| <--   |      |          |                 |             |

ED Entered STN: 28 Sep 2001

AB The present invention relates to injectable compns. comprising

biocompatible, swellable, hydrophilic, non-toxic and substantially spherical microspheres and a biocompatible carrier for use in dermal augmentation. The present invention further relates to methods of dermal augmentation, particularly for the treatment of skin contour deficiencies, using the injectable compns. For example, microspheres were prepared from (a) 58 g of sodium chloride and 27 g of sodium acetate in 100 mL of water, (b) 400 mL of glycerol, (c) monomers, i.e., 90 g of N-tris-hydroxymethylmethacrylamide, 35 mg of diethylaminoethylacrylamide and 10 g of N,N-methylenebis-acrylamide, and (d) gelatin, under heating at 60-70°. The total volume of the mixture was adjusted to 980 mL by addition of hot water and then 20 mL of a 70 mg/mL ammonium persulfate solution and 4 mL of N,N,N',N'-tetramethylethylenediamine were added. This solution was poured into paraffin oil at 50-70° under stirring. After a few minutes, the polymerization reaction of acrylic monomers is manifested by an increase of temperature. The microspheres are then recovered by decanting, washed carefully, screened and sterilized in an autoclave in a buffered medium. The microspheres, after screen calibration, possess the characteristics desired for dermal augmentation, including a marked cationic charge and an effective adhesion agent (gelatin or denatured collagen).

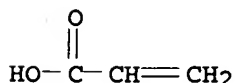
IT 111-30-8, Glutaraldehyde  
(crosslinking agent; preparation of polymeric injectable and swellable microspheres for dermal augmentation)  
RN 111-30-8 HCAPLUS  
CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

IT 58374-38-2, Sodium acrylate-vinyl alcohol copolymer  
(preparation of polymeric injectable and swellable microspheres for dermal augmentation)  
RN 58374-38-2 HCAPLUS  
CN 2-Propenoic acid, sodium salt (1:1), polymer with ethenol (CA INDEX NAME)

CM 1

CRN 7446-81-3  
CMF C3 H4 O2 . Na

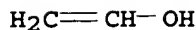


● Na

CM 2

CRN 557-75-5  
CMF C2 H4 O





IC ICM A61F002-00  
ICS A61L027-24; A61K009-50  
CC 63-7 (Pharmaceuticals)  
IT Polyoxyalkylenes, biological studies  
(crosslinked; preparation of polymeric injectable and  
swellable microspheres for dermal augmentation)  
IT Anti-inflammatory agents  
Antibacterial agents  
Antihistamines  
Biocompatibility  
Crosslinking agents  
Skin, disease  
Swelling, physical  
(preparation of polymeric injectable and swellable microspheres for  
dermal augmentation)  
IT 9003-04-7, Sodium polyacrylate 25322-68-3, Polyethylene oxide  
(crosslinked; preparation of polymeric injectable and  
swellable microspheres for dermal augmentation)  
IT 111-30-8, Glutaraldehyde  
(crosslinking agent; preparation of polymeric injectable and  
swellable microspheres for dermal augmentation)  
IT 79-06-1D, Acrylamide, derivs., polymers 79-10-7D, Acrylic acid,  
esters, copolymers with vinyl acetate 108-05-4D, Vinyl acetate,  
copolymers with acrylic acid esters 127-09-3, Sodium acetate  
1309-38-2, Magnetite (Fe<sub>3</sub>O<sub>4</sub>), biological studies 7439-89-6D, Iron,  
salts, biological studies 7439-95-4D, Magnesium, salts, biological  
studies 7440-09-7D, Potassium, salts, biological studies  
7440-23-5D, Sodium, salts, biological studies 7440-66-6D, Zinc,  
salts, biological studies 7440-70-2D, Calcium, salts, biological  
studies 7647-14-5, Sodium chloride, biological studies 7727-43-7,  
Barium sulfate 7727-54-0, Ammonium persulfate 9003-05-8,  
Acrylamide polymer 9003-53-6, Polystyrene 25549-84-2, Sodium  
acrylate polymer 25969-89-5, Methyl maleate-vinyl acetate copolymer  
26426-80-2, Isobutylene-maleic anhydride copolymer 58374-38-2  
, Sodium acrylate-vinyl alcohol copolymer 59017-50-4D, acyl derivs.  
107830-79-5, Starch-acrylonitrile graft copolymer 944130-99-8,  
Rhodamine isothiocyanate  
(preparation of polymeric injectable and swellable microspheres for  
dermal augmentation)

L74 ANSWER 9 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:7600 HCAPLUS

DOCUMENT NUMBER: 134:76427

TITLE: Non-adherent nasal, sinus and otic packing and  
method for processing sponge materials in  
fabrication of packings

INVENTOR(S): Cerccone, Ronald J.

PATENT ASSIGNEE(S): Xomed Surgical Products, Inc., USA

SOURCE: U.S., 8 pp., Division of U.S. Ser. No. 778,141.  
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE  | APPLICATION NO. | DATE  |
|------------|------|-------|-----------------|-------|
| -----      | ---- | ----- | -----           | ----- |

|                        |    |          |                |             |
|------------------------|----|----------|----------------|-------------|
| US 6169123             | B1 | 20010102 | US 1998-121053 | 19980723    |
|                        |    |          | <--            |             |
| US 6214895             | B1 | 20010410 | US 2000-661896 | 20000914    |
|                        |    |          | <--            |             |
| PRIORITY APPLN. INFO.: |    |          | US 1997-778141 | A3 19970102 |
|                        |    |          | <--            |             |
|                        |    |          | US 1998-121053 | A3 19980723 |
|                        |    |          | <--            |             |

ED Entered STN: 04 Jan 2001

AB Nasal, sinus and otic packings exhibiting a less adherent surface when in contact with tissue and being less traumatic on removal are prepared. In a first embodiment, polyvinyl acetal foamed packing material undergoes a surface modification imparting a non-adherent hydrogel coated surface. The surface modification is accomplished after final processing and fabrication of the packing product shape. The packing material is subjected to either an atomized spray of an aqueous solution of EtOH or a poly(vinyl acetate)/poly(vinyl alc.) copolymer. In another embodiment, a foamed polyvinyl acetal material is produced by **crosslinking** polyvinyl alc. with an organic compound containing 2 hydroxyl reactive groups in the presence of an inert gas. An aqueous solution containing PVP is mixed into the reaction during **crosslinking**. The recovered sponge material foam product is cut or molded into a packing thereby resulting in the production of a packing having a uniformly dispersed gel throughout and as an outer hydrogel coating. Nasal, sinus and otic packings prepared by these methods exhibit a less adherent surface upon contact with tissue and are far less traumatic to the tissue upon removal.

IC ICM C08J009-28

ICS C08J009-30

INCL 521141000

CC 63-7 (Pharmaceuticals)

Section cross-reference(s): 38

IT **Crosslinking**

Ear

Nose

Shear

(nasal and sinus and otic packing and method for processing sponge materials)

IT **Polyvinyl acetals**

(nasal and sinus and otic packing and method for processing sponge materials)

IT **Aldehydes, reactions**

(nasal and sinus and otic packing and method for processing sponge materials)

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 10 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:764805 HCAPLUS

DOCUMENT NUMBER: 132:298738

TITLE: Synthesis and characterization of noncrosslinked and **crosslinked** poly(vinyl alcohol-co-crotonic acid) hydrogels

AUTHOR(S): Ranjha, N. M.

CORPORATE SOURCE: Department of Pharmacy, Bahauddin Zakariya University, Multan, 60800, Pak.

SOURCE: Saudi Pharmaceutical Journal (1999), 7(3), 130-136

CODEN: SPJOEM; ISSN: 1319-0164

PUBLISHER: Saudi Pharmaceutical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

ED Entered STN: 05 Dec 1999

AB The possibility of combining hydrophilic (VAL) monomer with crotonic acid (CA) monomer and to explore their potential for drug delivery was studied. Six noncrosslinked poly(vinyl acetate-co-crotonic acid) (VAC/CA) samples 50:50 to 95:05 mol% were prepared. The monomer feed ratio affects the mol. weight and the polymerization hindered by increasing the CA fraction in the monomer mixture. This is most probably due to differences in reactivity ratios. All the samples were hydrolyzed in methanolic KOH solution. Salt form was converted into acid form by adding acetic acid. In poly(vinyl alc.-co-crotonic acid) (VAL/CA) polymers, the OH and the COOH groups seem to be partially involved in a lactonized form. By increasing the COOH groups, the amount of OH groups reduced through lactone ring formation. The COOH groups are few in nos. and might be at scattered positions in the chain, making the gels unable to show pH-sensitivity. One sample of VAL/CA containing monomeric composition (VAC/CA 90:10) was **crosslinked** with glutaraldehyde, with various **crosslinking** ratios. A remarkable effect of **crosslinking** ratio was observed on swelling and phenazone release.

IT 111-30-8, Glutaraldehyde  
(poly(vinyl alc.(Ac)-co-crotonic acid) hydrogels  
**crosslinked** with)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

IT 31134-93-7P, Crotonic acid-vinyl alcohol copolymer  
(synthesis and characterization of noncrosslinked and  
**crosslinked** poly(vinyl alc.-co-crotonic acid) hydrogels)

RN 31134-93-7 HCAPLUS

CN 2-Butenoic acid, polymer with ethenol (CA INDEX NAME)

CM 1

CRN 3724-65-0

CMF C4 H6 O2

Me-CH=CH-CO<sub>2</sub>H

CM 2

CRN 557-75-5

CMF C2 H4 O

H<sub>2</sub>C=CH-OH

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 35

IT Hydrogels

(synthesis and characterization of noncrosslinked and crosslinked poly(vinyl alc.-co-crotonic acid) hydrogels)

IT 111-30-8, Glutaraldehyde  
(poly(vinyl alc.(Ac)-co-crotonic acid) hydrogels crosslinked with)

IT 25609-89-6P, Crotonic acid-vinyl acetate copolymer  
(synthesis and characterization of noncrosslinked and crosslinked poly(vinyl acetate-co-crotonic acid) hydrogels)

IT 31134-93-7P, Crotonic acid-vinyl alcohol copolymer  
(synthesis and characterization of noncrosslinked and crosslinked poly(vinyl alc.-co-crotonic acid) hydrogels)

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 11 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:607499 HCAPLUS

DOCUMENT NUMBER: 125:257280

ORIGINAL REFERENCE NO.: 125:47871a,47874a

TITLE: Crosslinked polymers for preparation of contact lenses

INVENTOR(S): Mueller, Beat

PATENT ASSIGNEE(S): Ciba-Geigy A.-G., Switz.

SOURCE: PCT Int. Appl., 59 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE       |
|---|------|----------|-----------------|------------|
| WO 9624074  | A1   | 19960808 | WO 1996-EP245   | 19960122   |
| <--   |      |          |                 |            |
| W: AL, AM, AU, BB, BG, BR, CA, CN, CZ, EE, FI, GE, HU, IS, JP, KP, KR, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, AZ, BY, KG, KZ, RU, TJ, TM |      |          |                 |            |
| RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG  |      |          |                 |            |
| AU 9644386  | A    | 19960821 | AU 1996-44386   | 19950122   |
| <--   |      |          |                 |            |
| EP 807265   | A1   | 19971119 | EP 1996-900604  | 19960122   |
| <--   |      |          |                 |            |
| EP 807265   | B1   | 20000412 |                 |            |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE   |      |          |                 |            |
| JP 10513408   | T    | 19981222 | JP 1996-523211  | 19960122   |
| <--   |      |          |                 |            |
| JP 3782451  | B2   | 20060607 |                 |            |
| AT 191796   | T    | 20000415 | AT 1996-900604  | 19960122   |
| <--   |      |          |                 |            |
| ZA 9600825  | A    | 19960805 | ZA 1996-825     | 19960202   |
| <--   |      |          |                 |            |
| US 5932674  | A    | 19990803 | US 1997-875535  | 19970730   |
| <--   |      |          |                 |            |
| US 6265509  | B1   | 20010724 | US 1999-236158  | 19990122   |
| <--   |      |          |                 |            |
| JP 2006193526   | A    | 20060727 | JP 2006-13475   | 20060123   |
| <--   |      |          |                 |            |
| PRIORITY APPLN. INFO.:  |      |          | CH 1995-312     | A 19950203 |

<--  
 JP 1996-523211      A3 19960122  
 <--  
 WO 1996-EP245      W 19960122  
 <--  
 US 1997-875535      A3 19970730  
 <--

OTHER SOURCE(S):      MARPAT 125:257280

ED Entered STN: 12 Oct 1996

AB The invention relates to a novel process for the production of moldings, in particular contact lenses, in which a soluble prepolymer comprising units containing a **crosslinkable** group and at least one unit containing a modifier is **crosslinked** in solution, and to moldings, in particular contact lenses, obtainable by this process. The present invention likewise relates to novel prepolymers which can be employed in the novel process, in particular derivs. of a polyvinyl alc. having a mol weight of at least about 2000 which comprises from about 0.5 to about 80%, based on the number of hydroxyl groups in the polyvinyl alc., as disclosed in detail in the description, and to **crosslinked** polymers, either homopolymers or copolymers, made from these novel prepolymers, a process for the preparation of the novel prepolymers and the homopolymers and copolymers obtainable therefrom, to moldings made from said homopolymers or copolymers, and to a process for the production of contact lenses using said homopolymers or copolymers. Thus, 300 g of a polyvinyl alc. was dissolved in 800 g water at 95°, then 30 g N-(4,4-diethoxybutyl)acrylamide (preparation given), 500 g acetic acid, 100 g concentrate HCl and sufficient water to give a total of 2000 g of reaction solution was added and the mixture was stirred at 20° for 20 h; then the pH was adjusted to 7 and the polymer solution was filtered and purified by ultrafiltration. Irgacure 2959 0.3% was added to a 30% solution of above polymer in a polypropylene contact lens mold, the solution was exposed to UV lamp for 6 s and the lenses were removed from the mold.

IT 123-72-8DP, Butyraldehyde, reaction products with vinyl alc.-acetal copolymer acetate 182074-10-8P 182074-11-9P

(crosslinked polymers for preparation of contact lenses)

RN 123-72-8 HCAPLUS

CN Butanal (CA INDEX NAME)



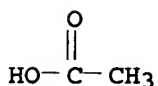
RN 182074-10-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with ethenol, acetate (9CI) (CA INDEX NAME)

CM 1

CRN 64-19-7

CMF C2 H4 O2



CM 2

CRN 31212-98-3

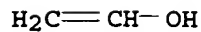
CMF (C4 H6 O2 . C2 H4 O)x

CCI PMS

CM 3

CRN 557-75-5

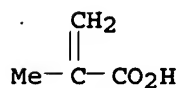
CMF C2 H4 O



CM 4

CRN 79-41-4

CMF C4 H6 O2



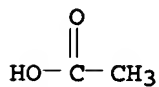
RN 182074-11-9 HCAPLUS

CN 2-Propenoic acid, polymer with ethenol, acetate (9CI) (CA INDEX NAME)

CM 1

CRN 64-19-7

CMF C2 H4 O2



CM 2

CRN 26299-60-5

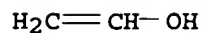
CMF (C3 H4 O2 . C2 H4 O)x

CCI PMS

CM 3

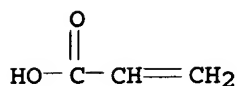
CRN 557-75-5

CMF C2 H4 O



CM 4

CRN 79-10-7  
CMF C3 H4 O2



IC ICM G02B001-04  
ICS C08F008-00  
CC 63-7 (Pharmaceuticals)  
Section cross-reference(s): 35, 38  
ST polyvinyl alc crosslinking contact lens  
IT Lenses  
(contact, crosslinked polymers for preparation of contact lenses)  
IT 123-72-8DP, Butyraldehyde, reaction products with vinyl alc.-acetal copolymer acetate 4170-30-3DP, Crotonaldehyde, reaction products with vinyl alc.-acetal copolymer acetate 9003-20-7DP, Mowilith 30, reaction products with acetals 181863-00-3DP, reaction products with modifier acetals 181863-00-3P 181863-01-4P 182074-05-1P 182074-06-2P 182074-07-3P 182074-08-4P 182074-09-5P 182074-10-8P 182074-11-9P  
(crosslinked polymers for preparation of contact lenses)  
IT 64-19-7, Acetic acid, reactions 79-30-1, Isobutyryl chloride 108-24-7, Acetic anhydride 108-30-5, Succinic anhydride, reactions 616-45-5, Pyrrolidone 766-39-2, Dimethylmaleic anhydride 814-68-6, Acryloyl chloride 920-46-7, Methacryloyl chloride 2935-90-2 9002-89-5, Polyvinyl alcohol 22483-09-6, Aminoacetaldehyde dimethyl acetal 29513-26-6, 2-Vinyl-4,4-dimethylazlactone 103612-76-6  
(crosslinked polymers for preparation of contact lenses)  
IT 6346-09-4P, 4-Aminobutyraldehyde diethyl acetal 24214-09-3P 49707-23-5P, Acrylamidoacetaldehyde dimethyl acetal 62005-48-5P 95984-11-5P 97387-72-9P 174510-31-7P 181862-86-2P 181862-87-3P 181862-88-4P 181862-89-5P 181862-90-8P 181862-91-9P 181862-92-0P 181862-93-1P  
(crosslinked polymers for preparation of contact lenses)

L74 ANSWER 12 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:948930 HCAPLUS

DOCUMENT NUMBER: 123:342586

ORIGINAL REFERENCE NO.: 123:61475a,61478a

TITLE: Preparation and properties of poly(vinyl alcohol)-N-isopropylacrylamide-based graft terpolymer membranes

AUTHOR(S): Ogata, Tomonari; Kurihara, Seiji; Nonaka, Takamasa

CORPORATE SOURCE: Faculty of Engineering, Kumamoto University, Kumamoto, 860, Japan

SOURCE: Nippon Kagaku Kaishi (1995), (11), 909-15

CODEN: NKAKB8; ISSN: 0369-4577

PUBLISHER: Nippon Kagakkai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

ED Entered STN: 29 Nov 1995

AB Thermosensitive terpolymers were synthesized by graft polymerization of N-isopropylacrylamide (NIPPAm) and monomers such as Bu methacrylate (BMA), 2-hydroxyethyl methacrylate (HE-MA) and methacrylic acid (MAC)

on poly(vinyl alc.) (PVA) and the terpolymer membranes were prepared by evaporating solvent from their DMSO solution. The introduction of hydrophobic monomer such as BMA and of hydrophilic monomer such as HEMA decreased and increased the swelling of the terpolymer membranes in water and shifted the transition temperature to lower and higher temperature, resp. On

the

other hand, the PVA-g-(NIPAAm-MAC) membranes containing carboxyl groups exhibited an abnormal swelling behavior in water depending on the content of carboxyl groups. The swelling ratio of PVA-g-(NIPAAm-MAC5) (Number after MAC represents the weight ratio of MAC in monomer mixture in feed) and PVA-g-(NIPAAm-MAC10) increased with increasing temperature, although the swelling ratio of PVA-g-NIPAAm decreased with increasing temperature, in particular, decreased drastically above 30°. The swelling ratio of PVA-g-(NIPAAm-MAC30) and PVA-g-(NIPAAm-MAC50) was very small in the temperature range (10°-45°) and the phase-transition temperature of the membranes could not be observed. This abnormal swelling behavior is mainly attributed to the hydrogen bonding between amide groups and carboxyl groups and hydrophobic interaction based on  $\alpha$ -Me groups in MAC moiety in the terpolymer membranes. Temperature dependence of the swelling of PVA-g-(NIPAAm-MAC5) at increasing temperature was not the same as that at decreasing temperature. The permeation of Li<sup>+</sup> through PVA-g-(NIPAAm-MAC5) treated with glutaraldehyde was investigated by using the system containing 0.005 mol·dm<sup>-3</sup> HCl (left side) and 0.005 mol·dm<sup>-3</sup> LiOH (right side). The transport rate of Li<sup>+</sup> increased with increasing temperature up to 30° and then decreased drastically above the temperature. The uphill transport of Li<sup>+</sup> was also observed at 25° and 30°.

IT 171204-71-0P, Glutaraldehyde-N-isopropylacrylamide-methacrylic acid-vinyl alcohol graft copolymer

(preparation and properties of poly(vinyl alc.)-isopropylacrylamide-based graft terpolymer membranes)

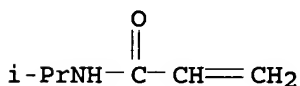
RN 171204-71-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with ethenol, N-(1-methylethyl)-2-propenamide and pentanedial, graft (9CI) (CA INDEX NAME)

CM 1

CRN 2210-25-5

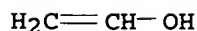
CMF C6 H11 N O



CM 2

CRN 557-75-5

CMF C2 H4 O



CM 3

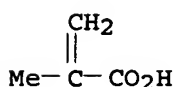


CRN 111-30-8  
CMF C5 H8 O2

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

CM 4

CRN 79-41-4  
CMF C4 H6 O2



CC 38-3 (Plastics Fabrication and Uses).  
IT 126539-81-9P, N-Isopropylacrylamide-vinyl alcohol graft copolymer  
160926-61-4P 171204-68-5P, Butyl  
methacrylate-N-isopropylacrylamide-vinyl alcohol graft copolymer  
171204-69-6P, 2-Hydroxyethyl methacrylate-N-isopropylacrylamide-vinyl  
alcohol graft copolymer 171204-70-9P,  
N-Isopropylacrylamide-methacrylic acid-vinyl alcohol graft copolymer  
171204-71-0P, Glutaraldehyde-N-isopropylacrylamide-methacrylic  
acid-vinyl alcohol graft copolymer  
(preparation and properties of poly(vinyl  
alc.)-isopropylacrylamide-based graft terpolymer membranes)

L74 ANSWER 13 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:828321 HCAPLUS  
DOCUMENT NUMBER: 123:199832  
ORIGINAL REFERENCE NO.: 123:35697a,35700a  
TITLE: Extruded, rough-surfaced poly(vinyl butyral) (PVB)  
sheet and manufacturing method  
INVENTOR(S): Hopfe, Harold Herbert; Karagiannis, Aristotelis  
PATENT ASSIGNEE(S): Monsanto Co., USA  
SOURCE: PCT Int. Appl., 25 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|--|------|----------|-----------------|----------|
| WO 9507940   | A1   | 19950323 | WO 1993-US8859  | 19930917 |
| <--  |      |          |                 |          |
| W: AU, BR, CA, CZ, JP, KR, SK, US                                  |      |          |                 |          |
| RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                 |          |
| CA 2170510   | A1   | 19950323 | CA 1993-2170510 | 19930917 |
| <--  |      |          |                 |          |
| CA 2170510   | C    | 20040330 |                 |          |
| AU 9351319   | A    | 19950403 | AU 1993-51319   | 19930917 |
| <--  |      |          |                 |          |
| AU 681354  | B2   | 19970828 |                 |          |
| EP 719288  | A1   | 19960703 | EP 1993-922250  | 19930917 |
| <--  |      |          |                 |          |

EP 719288 B1 19991201  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL,  
 PT, SE

|                        |    |          |                |            |
|------------------------|----|----------|----------------|------------|
| BR 9307887             | A  | 19960806 | BR 1993-7887   | 19930917   |
|                        |    |          | <--            |            |
| JP 09502755            | T  | 19970318 | JP 1995-509142 | 19930917   |
|                        |    |          | <--            |            |
| JP 3305721             | B2 | 20020724 |                |            |
| AT 187180              | T  | 19991215 | AT 1993-922250 | 19930917   |
|                        |    |          | <--            |            |
| SK 281573              | B6 | 20010510 | SK 1996-316    | 19930917   |
|                        |    |          | <--            |            |
| CZ 288616              | B6 | 20010815 | CZ 1996-681    | 19930917   |
|                        |    |          | <--            |            |
| CN 1102840             | A  | 19950524 | CN 1994-115319 | 19940916   |
|                        |    |          | <--            |            |
| CN 1063463             | C  | 20010321 |                |            |
| US 5595818             | A  | 19970121 | US 1995-387855 | 19950227   |
|                        |    |          | <--            |            |
| PRIORITY APPLN. INFO.: |    |          | EP 1993-922250 | A 19930917 |
|                        |    |          | <--            |            |
|                        |    |          | WO 1993-US8859 | 19930917   |
|                        |    |          | <--            |            |

ED Entered STN: 04 Oct 1995

AB In manufacturing the title sheet, used as an impact-dissipating layer in glass or rigid plastic laminates where the roughened surface facilitates air removal during the lamination process, a fraction of stiffly resilient particles of crosslinked PVB are randomly dispersed in the PVB matrix. On exiting an extrusion die opening the particles microscopically protrude from the sheet and roughen its surface. Thus, extrusion of a blend containing 90 parts PVB crosslinked (preparation given) with 0.01 phr glutaraldehyde (I) (matrix resin), 10 parts sep. prepared PVB crosslinked with 0.135 phr I (dispersed phase), and 32 parts dihexyl adipate plasticizer gave a 0.76-mm-thick sheet having a surface with average peak-to-valley height 63.3  $\mu$ m, vs. 20.1  $\mu$ m for a similar sheet containing no dispersed phase.

IT 111-30-8DP, Glutaraldehyde, reaction products with poly(vinyl butyral)  
 (crosslinked, dispersed phase in poly(vinyl butyral) matrix;  
 extruded, rough-surfaced poly(vinyl butyral) sheet and manufacturing method)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

OHC- (CH<sub>2</sub>)<sub>3</sub>-CHO

IC ICM C08F008-28

CC 35-8 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 38

IT Vinyl acetal polymers  
 (butyrals, glutaraldehyde-crosslinked, dispersed phase in poly(vinyl butyral) matrix; extruded, rough-surfaced poly(vinyl butyral) sheet and manufacturing method)

IT 111-30-8DP, Glutaraldehyde, reaction products with poly(vinyl butyral)  
 (crosslinked, dispersed phase in poly(vinyl butyral) matrix;  
 extruded, rough-surfaced poly(vinyl butyral) sheet and manufacturing method)

L74 ANSWER 14 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:609103 HCAPLUS

DOCUMENT NUMBER: 115:209103

ORIGINAL REFERENCE NO.: 115:35693a,35696a

TITLE: Osmotic and scattering properties of chemically crosslinked poly(vinyl alcohol) hydrogels  
 AUTHOR(S): Geissler, Erik; Horkay, Ferenc; Hecht, Anne Marie  
 CORPORATE SOURCE: Lab. Spectrom. Phys., Univ. Joseph Fourier  
 Grenoble, St. Martin d'Heres, 38402, Fr.  
 SOURCE: Macromolecules (1991), 24(22), 6006-11  
 CODEN: MAMOBX; ISSN: 0024-9297

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 15 Nov 1991

AB Swelling pressure and shear modulus measurements are reported for glutaraldehyde-crosslinked poly(vinyl alc.) (I) hydrogels, and an attempt is made to correlate the macroscopic results with data obtained by small-angle x-ray scattering (SAXS) measurements performed on the same gel samples. The swelling pressure of the I gels can be satisfactorily described by a two-term equation consisting of a separable elastic and mixing contribution. The concentration dependence of the elastic term differs slightly from the classical theor. prediction. The mixing term follows a power-law behavior with an exponent close to that predicted by scaling theory. Osmotic pressure results obtained for aqueous I solns. are used to normalize the SAXS spectra to yield absolute scattering intensities. The scattering spectra of the gels are resolved into a static and a dynamic (solutionlike) component. The intensity of the latter is compared with values calculated from independent osmotic measurements. The second moments describing the static concentration fluctuations increase strongly with the crosslinking d.

IT 111-30-8D, Glutaraldehyde, cyclic acetals with poly(vinyl alc.)  
 (osmotic pressure and shear modulus of crosslinked hydrogels of, small-angle x-ray scattering in relation to)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

CC 36-7 (Physical Properties of Synthetic High Polymers)

IT Vinyl acetal polymers  
 (glutarals, osmotic pressure and shear modulus of crosslinked hydrogels of, small-angle x-ray scattering in relation to)

IT 111-30-8D, Glutaraldehyde, cyclic acetals with poly(vinyl alc.)  
 (osmotic pressure and shear modulus of crosslinked hydrogels of, small-angle x-ray scattering in relation to)

L74 ANSWER 15 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:473348 HCAPLUS

DOCUMENT NUMBER: 115:73348

ORIGINAL REFERENCE NO.: 115:12681a,12684a

TITLE: Composite pervaporation membrane and dewatering of organic compounds therewith

INVENTOR(S): Leon, Nee Jean Maurice; Nguyen Quang Trong;

PATENT ASSIGNEE(S): Brueschke, Hartmut  
 Gesellschaft fuer Trenntechnik m.b.H. (GFT),  
 Germany  
 SOURCE: Ger. Offen., 8 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| DE 3939867  | A1   | 19910606 | DE 1989-3939867 | 19891201 |
|   |      |          | <--             |          |
| CA 2046332  | A1   | 19910602 | CA 1990-2046332 | 19901203 |
|   |      |          | <--             |          |
| WO 9108043  | A1   | 19910613 | WO 1990-EP2074  | 19901203 |
|   |      |          | <--             |          |
| W: BR, CA, JP, KR, US                                     |      |          |                 |          |
| EP 436128   | A1   | 19910710 | EP 1990-123133  | 19901203 |
|   |      |          | <--             |          |
| EP 436128   | B1   | 19950308 |                 |          |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE |      |          |                 |          |
| BR 9007088  | A    | 19920128 | BR 1990-7088    | 19901203 |
|   |      |          | <--             |          |
| JP 04506766   | T    | 19921126 | JP 1991-501215  | 19901203 |
|   |      |          | <--             |          |
| US 5334314  | A    | 19940802 | US 1991-741508  | 19911001 |
|   |      |          | <--             |          |

PRIORITY APPLN. INFO.:  
 DE 1989-3939841 A 19891201  
 <--  
 DE 1989-3939867 A 19891201  
 <--  
 WO 1990-EP2074 A 19901203  
 <--

ED Entered STN: 23 Aug 1991

AB The title membrane has a poly(vinyl alc.) (I)-based separation layer which is **crosslinked** by the action of acids in the vapor phase. Thus, to a porous membrane prepared from nonwoven polyester fibers and polyacrylonitrile was applied an aqueous solution of I containing 0.05 mol maleic

acid per mol of vinyl alc. units. The membrane was dried and treated with hot BrCH<sub>2</sub>CH<sub>2</sub>Br to effect **crosslinking**. The **crosslinked** membrane was used to dry HOAc containing 10-98% water, providing a permeate containing >99.8% water in all cases and was stable at ≤100°. Conventional I-based membranes lost their selectivity after a short time of operation.

IT 111-30-8D, Pentanedial, cyclic acetals with poly(vinyl alc.) (**crosslinked**, complex pervaporation membranes containing, for dehydration and dewatering of organic compds.)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

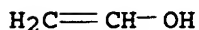
OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

IT 34229-80-6P, Maleic acid-vinyl alcohol copolymer (**crosslinked**, composite pervaporation membranes containing, for drying and dewatering of organic compds.)

RN 34229-80-6 HCAPLUS  
 CN 2-Butenedioic acid (2Z)-, polymer with ethenol (CA INDEX NAME)

CM 1

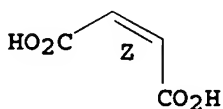
CRN 557-75-5  
 CMF C2 H4 O



CM 2

CRN 110-16-7  
 CMF C4 H4 O4

Double bond geometry as shown.



IC ICM B01D071-82  
 ICS B01D071-38; B01D061-36; B01D069-12; C07B063-00  
 CC 38-3 (Plastics Fabrication and Uses)  
 ST polyvinyl alc membrane pervaporation; dewatering membrane polyvinyl alc; **crosslinking** polyvinyl alc membrane  
 IT **Crosslinking** catalysts  
     (acids, for poly(vinyl alc.) compns., in composite pervaporation membranes for dehydration and dewatering of organic compds.)  
 IT Vinyl acetal polymers  
     (formals, maleated, **crosslinked**, composite pervaporation membranes containing, for drying and dewatering of organic compds.)  
 IT Vinyl acetal polymers  
     (glutarals, **crosslinked**, composite pervaporation membranes containing, for drying and dewatering of organic compds.)  
 IT Membranes  
     (pervaporation, composites, **crosslinked** poly(vinyl alc.)-based, for dewatering and drying of organic compds.)  
 IT 106-93-4, 1,2-Dibromoethane 107-06-2, 1,2-Dichloroethane, uses and miscellaneous 7647-01-0, Hydrochloric acid, uses and miscellaneous 7664-93-9, Sulfuric acid, uses and miscellaneous 7697-37-2, Nitric acid, uses and miscellaneous 7782-77-6, Nitrous acid 7782-99-2, Sulfurous acid, uses and miscellaneous 10035-10-6, Hydrobromic acid, uses and miscellaneous  
     (catalysts, for **crosslinking** of poly(vinyl alc.)-based compns. in composite pervaporation membranes for dehydration and dewatering of organic compds.)  
 IT 111-30-8D, Pentanediol, cyclic acetals with poly(vinyl alc.)  
     (**crosslinked**, complex pervaporation membranes containing, for dehydration and dewatering of organic compds.)  
 IT 56-81-5DP, 1,2,3-Propanetriol, reaction products with glutaraldehyde and poly(vinyl alc.)  
     (**crosslinked**, composite pervaporation membranes containing, for drying and dehydration of organic compds.)  
 IT 9002-89-5P, Poly(vinyl alcohol) 34229-80-6P, Maleic

acid-vinyl alcohol copolymer

(crosslinked, composite pervaporation membranes containing,  
for drying and dewatering of organic compds.)

IT 64-17-5P, Ethanol, preparation 64-19-7P, Acetic acid, preparation  
67-63-0P, 2-Propanol, preparation 77-92-9P, Citric acid, preparation  
110-86-1P, Pyridine, preparation 123-86-4, Butyl acetate 141-78-6,  
Ethyl acetate, preparation 629-14-1, Ethylene glycol diethyl ether  
(dewatering of, composite pervaporation membranes based on  
crosslinked poly(vinyl alc.) for)

L74 ANSWER 16 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1990:407260 HCAPLUS

DOCUMENT NUMBER: 113:7260

ORIGINAL REFERENCE NO.: 113:1393a,1396a

TITLE: Decay time distributions from dynamic light  
scattering for aqueous poly(vinyl alcohol) gels  
and semidilute solutions

AUTHOR(S): Fang, Liqi; Brown, Wyn

CORPORATE SOURCE: Inst. Phys. Chem., Univ. Uppsala, Uppsala, 751 21,  
Swed.

SOURCE: Macromolecules (1990), 23(13), 3284-90

CODEN: MAMOBX; ISSN: 0024-9297

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 06 Jul 1990

AB Dynamic light scattering was used to obtain decay time distributions  
for permanent poly(vinyl alc.) (I) gels and the corresponding semidil.  
solns. by Laplace inversion of the autocorrelation functions. The  
gels were prepared from solns. of narrow-mol.-weight-distribution polymers.  
by crosslinking using glutaraldehyde. The I concentration range extended  
≤7% weight/volume Parallel measurements were made on the gel and  
the corresponding solution as a function of temperature at 3-55°. Two  
main relaxational modes typified the I solns., both relaxation rates  
being diffusive. The fast relaxation characterized the diffusive  
motions in the transient gel formed by interpenetration of mol.  
domains. The slow mode was considered to derive from clusters or  
groups of chains having a size that depended on concentration and only  
slightly on temperature Formation of the permanent gel resulted in  
disappearance of the slow mode and the gels were characterized by  
single-exponential correlation functions.

IT 111-30-8D, Glutaraldehyde, cyclic acetals with poly(vinyl  
alc.)

(crosslinked, dynamic light scattering by gels of, decay time  
distribution in relation to)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

CC 36-7 (Physical Properties of Synthetic High Polymers)

IT Vinyl acetal polymers

(glutarals, crosslinked, dynamic light scattering by gels  
of, decay time distributions in relation to)

IT 111-30-8D, Glutaraldehyde, cyclic acetals with poly(vinyl  
alc.)

(crosslinked, dynamic light scattering by gels of, decay time  
distribution in relation to)

L74 ANSWER 17 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1989:575165 HCAPLUS

DOCUMENT NUMBER: 111:175165

ORIGINAL REFERENCE NO.: 111:29191a,29194a

TITLE: The effects of crosslinking on the equation of state of a polymer solution

AUTHOR(S): Horkay, F.; Hecht, A. M.; Geissler, E.

CORPORATE SOURCE: Dep. Colloid Sci., L. Eotvos Univ., Budapest, H-1088, Hung.

SOURCE: Journal of Chemical Physics (1989), 91(4), 2706-11

CODEN: JCPSA6; ISSN: 0021-9606

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 10 Nov 1989

AB Measurements of the swelling pressure ( $\omega$ ) and shear modulus ( $G_s$ ) in a set of poly(vinyl acetate) networks swollen to different degrees in PhMe and in acetone are reported, using solns. of the uncrosslinked polymer to obtain deswelling under known conditions of osmotic pressure. The  $\omega$  can be completely described by the difference between 2 terms, each of which is a simple power law in the polymer volume fraction ( $\phi$ ). Identification of the subtractive term with that related to the elastic free energy of the network gives the volume elastic modulus ( $G_v$ ).  $G_s$ , obtained from mech. measurements at constant volume, and  $G_v$  are found to coincide for these samples, and neither deviates measurably from a one-third power law dependence on  $\phi$ , up to values of  $\phi$  in excess of 0.4. The remaining term in  $\omega$  of the networks behaves like the mixing term in a polymer solution, obeying good solvent scaling predictions as a function of concentration in both diluents. Its magnitude, however, is substantially smaller than the osmotic pressure of an equivalent uncrosslinked solution of infinite mol. weight. The difference between the crosslinked and uncrosslinked states conflicts with the assumption that the 2 mixing free energies are identical.

IT 111-30-8D, Pentanedral, cyclic acetals with poly(vinyl alc.), acetylated

(equation of state of, in solns., crosslinking effects in, swelling pressure, shear and elastic moduli in relation to)

RN 111-30-8 HCAPLUS

CN Pentanedral (CA INDEX NAME)

OHC- (CH<sub>2</sub>)<sub>3</sub>-CHO

CC 36-7 (Physical Properties of Synthetic High Polymers)

IT Vinyl acetal polymers

(glutarals, acetylated, equation of state of, in solns., crosslinking effects in, swelling pressure, shear and elastic moduli in relation to)

IT 111-30-8D, Pentanedral, cyclic acetals with poly(vinyl alc.), acetylated

(equation of state of, in solns., crosslinking effects in, swelling pressure, shear and elastic moduli in relation to)

L74 ANSWER 18 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1989:440221 HCAPLUS

DOCUMENT NUMBER: 111:40221

ORIGINAL REFERENCE NO.: 111:6863a,6866a

TITLE: Analysis of molecular characteristics of

crosslinked systems by gel-permeation chromatography

AUTHOR(S): Domnicheva, N. A.; Kogan, S. I.; Kuznetsova, V. A.; Sorokin, A. Ya.; Budtov, V. P.

CORPORATE SOURCE: Okht. Nauchno-Proizvod. Ob'edin. "Plastpolimer", Okhta, USSR

SOURCE: Vysokomolekulyarnye Soedineniya, Seriya A (1989), 31(3), 597-601  
CODEN: VYSAAF; ISSN: 0507-5475

DOCUMENT TYPE: Journal

LANGUAGE: Russian

ED Entered STN: 05 Aug 1989

AB Gel permeation chromatog. (GPC) of aqueous poly(vinyl alc.) partially crosslinked with glutaraldehyde showed that GPC can provide valuable information on the structure of polymer solns. in which crosslinking occurs. A technique for separating the bimodal chromatograms into individual peaks was developed for interpreting the chromatograms and provided quant. data on mol. weight distribution and mol. parameters of long-chain branching.

IT 111-30-8D, Glutaraldehyde, acetals with poly(vinyl alc.)  
(mol. weight distribution and structure of crosslinked, gel chromatog. in determination of)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

CC 36-2 (Physical Properties of Synthetic High Polymers)  
Section cross-reference(s): 80

IT Vinyl acetal polymers  
(glutarals, mol. weight distribution and structure of crosslinked, gel chromatog. in determination of)

IT 111-30-8D, Glutaraldehyde, acetals with poly(vinyl alc.)  
(mol. weight distribution and structure of crosslinked, gel chromatog. in determination of)

L74 ANSWER 19 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:571353 HCAPLUS

DOCUMENT NUMBER: 109:171353

ORIGINAL REFERENCE NO.: 109:28429a,28432a

TITLE: Deswelling of gels induced by unidirectional compression

AUTHOR(S): Horkay, Ferenc; Zrinyi, Miklos

CORPORATE SOURCE: Res. Lab. Inorg. Chem., Hung. Acad. Sci., Budapest, H-1112, Hung.

SOURCE: Biol. Synth. Polym. Networks (1988), 449-60. Editor(s): Kramer, Ole. Elsevier Appl. Sci.: London, UK.  
CODEN: 56IBAE

DOCUMENT TYPE: Conference

LANGUAGE: English

ED Entered STN: 12 Nov 1988

AB Elastic and swelling properties of acetylated vinyl glutaral polymer gels swollen by good and  $\theta$  solvents were studied. Deswelling was induced by unidirectional compression of the gels and by lowering the chemical potential of the diluent in the surrounding liquid phase. Satisfactory agreement was found in both diluents between theor. and exptl: data from the effect of unidirectional deformation on the concentration



of the gel. The equivalence of the response of the network to isotropic shrinkage and to unidirectional compression was confirmed exptl.

IT 111-30-8D, cyclic acetals with poly(vinyl alc.), acetylated  
(crosslinked, gels, deswelling of, by unidirectional compression)  
RN 111-30-8 HCAPLUS  
CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

CC 36-7 (Physical Properties of Synthetic High Polymers)

IT Vinyl acetal polymers  
(glutarals, acetylated, crosslinked, gels, deswelling of, by unidirectional compression)

IT 111-30-8D, cyclic acetals with poly(vinyl alc.), acetylated  
(crosslinked, gels, deswelling of, by unidirectional compression)

L74 ANSWER 20 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1987:558224 HCAPLUS

DOCUMENT NUMBER: 107:158224

ORIGINAL REFERENCE NO.: 107:25409a,25412a

TITLE: Application of modified poly(vinyl alcohol) films as separators in alkaline batteries: preparation and characterization studies

AUTHOR(S): Fabianowski, W.; Dobryszyski, J.

CORPORATE SOURCE: Dep. Chem., Warsaw Univ., Warsaw, 00-664, Pol.

SOURCE: Synth. Polym. Membr., Proc. Microsymp. Macromol., 29th (1987), Meeting Date 1986, 557-63.  
Editor(s): Sedlacek, Blahoslav; Kahovec, Jaroslav.  
de Gruyter: Berlin, Fed. Rep. Ger.  
CODEN: 56BMAC

DOCUMENT TYPE: Conference

LANGUAGE: English

ED Entered STN: 31 Oct 1987

AB Double-laminated, regenerated, cellulose-modified polyvinyl alc. (PVA) films were used in a Ag<sub>2</sub>O/Zn battery as separators; the battery had a self-discharge of 2.7 and 15% in storage (13 wk) at room temperature and 45°, resp. The durability and elec. parameters of the PVA films were improved by treatment with acrolein, polyacrylic acid, and carboxylic group compds.

IT 111-30-8D, Glutaraldehyde, acetal polymers with polyvinyl alc.  
26299-60-5, Acrylic acid-vinyl alcohol copolymer  
(cellophane modified with, battery separators, for silver oxide-zinc batteries)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

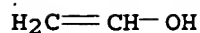
RN 26299-60-5 HCAPLUS

CN 2-Propenoic acid, polymer with ethenol (CA INDEX NAME)

CM 1

CRN 557-75-5

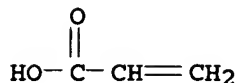
CMF C2 H4 O



CM 2

CRN 79-10-7

CMF C3 H4 O2



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

ST battery separator crosslinked polyvinyl alc; silver oxide  
zinc battery separator; polyacrylic acid battery separator  
modification

IT Batteries, primary  
(separators, crosslinked and modified polyvinyl alc., for  
silver oxide-zinc batteries)

IT 107-02-8D, Acrolein, acetal polymers with polyvinyl alc.  
111-30-8D, Glutaraldehyde, acetal polymers with polyvinyl alc.  
26299-60-5, Acrylic acid-vinyl alcohol copolymer  
(cellophane modified with, battery separators, for silver  
oxide-zinc batteries)

L74 ANSWER 21 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1987:497330 HCAPLUS

DOCUMENT NUMBER: 107:97330

ORIGINAL REFERENCE NO.: 107:15893a,15896a

TITLE: Crosslinked poly(vinyl butyral)

PATENT ASSIGNEE(S): Monsanto Co., USA

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.                                    | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| -----   | ---- | -----    | -----           | -----    |
| JP 62010106                                   | A    | 19870119 | JP 1986-152850  | 19860701 |
|   |      |          | <--             |          |
| JP 2523282                                    | B2   | 19960807 |                 |          |
| CA 1276744                                    | C    | 19901120 | CA 1986-512847  | 19860630 |
|   |      |          | <--             |          |
| AU 8659434                                    | A    | 19870108 | AU 1986-59434   | 19860701 |
|   |      |          | <--             |          |
| AU 581092                                     | B2   | 19890209 |                 |          |
| EP 211818                                     | A1   | 19870225 | EP 1986-870096  | 19860701 |
|   |      |          | <--             |          |
| EP 211818                                     | B1   | 19910612 |                 |          |
| R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE |      |          |                 |          |
| AT 64401                                      | T    | 19910615 | AT 1986-870096  | 19860701 |
|   |      |          | <--             |          |

|                        |   |          |                |            |
|------------------------|---|----------|----------------|------------|
| US 4814529             | A | 19890321 | US 1986-933837 | 19861124   |
|                        |   |          | <--            |            |
| US 4874814             | A | 19891017 | US 1989-316564 | 19890227   |
|                        |   |          | <--            |            |
| JP 08231639            | A | 19960910 | JP 1996-24138  | 19960209   |
|                        |   |          | <--            |            |
| PRIORITY APPLN. INFO.: |   |          | US 1985-751116 | A 19850702 |
|                        |   |          | <--            |            |
|                        |   |          | EP 1986-870096 | A 19860701 |
|                        |   |          | <--            |            |

ED Entered STN: 19 Sep 1987

AB Poly(vinyl butyral) having balanced high-temperature modulus properties and useful in safety glass laminates is prepared by selective crosslinking of poly(vinyl alc.) using dialdehydes such as glutaraldehyde (I) in the presence of butyraldehyde. Thus, a mixture containing 8% aqueous

poly(vinyl alc.) (>98% saponified) 1250, butyraldehyde 70, 8 6 and 50% aqueous I 0.06 g was treated with 5.7 mL 35% aqueous HNO<sub>3</sub> and the resulting mixture was kept at 16-20° for 24 min and heated at 75° for 2.5 h, giving a resin (II) with viscosity 215 cP vs. 175 in the absence of I. II (100 parts) with 32 parts dihexyl adipate was extruded to give a 0.76-mm thick film having melt viscosity 0.706 + 105 Pa.s.

IT 111-30-8, Glutaraldehyde  
(crosslinking agents, for vinyl acetal polymers)

RN 111-30-8 HCAPLUS

CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

IC ICM C08F008-28

ICS B29C047-00; C08F016-38; C08L029-14

ICI B29K029-00, B29K105-00

CC 35-8 (Chemistry of Synthetic High Polymers)

IT Vinyl acetal polymers

(butyrals, crosslinking of, by dialdehydes)

IT 111-30-8, Glutaraldehyde 141-31-1 1675-54-3,  
Bisphenol-A-diglycidyl ether 34074-28-7 80135-26-8  
(crosslinking agents, for vinyl acetal polymers)

L74 ANSWER 22 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1986:51479 HCAPLUS

DOCUMENT NUMBER: 104:51479

ORIGINAL REFERENCE NO.: 104:8319a,8322a

TITLE: Intramolecular crosslinking of poly(vinyl alcohol)

AUTHOR(S): Gebben, Bert; Van den Berg, Hans W. A.; Bargeman,  
Dick; Smolders, Cees A.

CORPORATE SOURCE: Sect. Phys., Tech. Hochsch. Leuna-Merseburg,  
Merseburg, DDR-4200, Ger. Dem. Rep.

SOURCE: Polymer (1985), 26(11), 1737-40

CODEN: POLMAG; ISSN: 0032-3861

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 23 Feb 1986

AB Poly(vinyl alc.) [9002-89-5] was crosslinked in dilute solution (concentrate 0.1%) with glutaraldehyde [111-30-8]. The reaction product was characterized by viscometry and gel permeation chromatog. (GPC). The intrinsic viscosity decreased with increasing degree of crosslinking and did not depend on temperature GPC revealed that the

reaction product was not homogeneous, but consisted of a mixture of particles with different sizes, possibly both intra- and intermolecularly crosslinked mols. The intramolecularly crosslinked mols. were smaller in size than the initial polymer mols. and their size depended on the degree of crosslinking. They possessed a narrow particle size distribution even if the initial polymer sample had a broad mol. weight distribution.

IT 111-30-8  
 (crosslinking agents, intramol., for poly(vinyl alc.))  
 RN 111-30-8 HCAPLUS  
 CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 35  
 IT Vinyl acetal polymers  
 (formation of, in intramol. crosslinking of poly(vinyl alc.) with glutaraldehyde)  
 IT 111-30-8  
 (crosslinking agents, intramol., for poly(vinyl alc.))

L74 ANSWER 23 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1985:47206 HCAPLUS  
 DOCUMENT NUMBER: 102:47206  
 ORIGINAL REFERENCE NO.: 102:7433a,7436a  
 TITLE: Acetalation of poly(vinyl alcohol) fibers by glutaraldehyde  
 AUTHOR(S): Lobova, A. B.; Goncharova, N. A.; Shamolina, I. I.; Vol'f, L. A.  
 CORPORATE SOURCE: USSR  
 SOURCE: Khimicheskies Volokna (1984), (6), 39-40  
 CODEN: KVLKA4; ISSN: 0023-1118  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

ED Entered STN: 09 Feb 1985  
 AB The degree of acetalation of vinal fibers with glutaraldehyde (I) varied from 2.0 to 36.2 mol%, depending on the concentration (1.5-5.0%) of I, bath temperature (20-80°), reaction time (20-120 min), and concentration (0.25-5%) of HCl. Fibers having maximum degree of acetalation and min. 0.5% shrinkage in boiling water were obtained in a bath containing 0.25% HCl and 5% I, at 60° in 120 min. These fibers, when grafted with acrylic acid, gave cation exchangers having static exchange capacity 4.4 mmol NaOH/g.

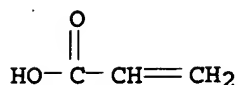
IT 26299-60-5P  
 (graft, fiber, cation exchangers, manufacture of, acetalation with glutaraldehyde in)  
 RN 26299-60-5 HCAPLUS  
 CN 2-Propenoic acid, polymer with ethenol (CA INDEX NAME)

CM 1

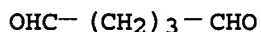
CRN 557-75-5  
 CMF C2 H4 O

H<sub>2</sub>C=CH-OH

CM 2

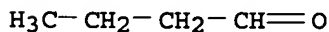
CRN 79-10-7  
CMF C3 H4 O2

IT 111-30-8  
(reaction of, with vinal fibers, in cation exchanger manufacture)  
RN 111-30-8 HCAPLUS  
CN Pentanedial (CA INDEX NAME)



CC 40-2 (Textiles)  
Section cross-reference(s): 38  
IT 26299-60-5P  
(graft, fiber, cation exchangers, manufacture of, acetalation with  
glutaraldehyde in)  
IT 111-30-8  
(reaction of, with vinal fibers, in cation exchanger manufacture)

L74 ANSWER 24 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1984:12290 HCAPLUS  
DOCUMENT NUMBER: 100:12290  
ORIGINAL REFERENCE NO.: 100:1929a,1932a  
TITLE: Chemical oxidizability of organic components in  
water  
AUTHOR(S): Janicke, W.  
CORPORATE SOURCE: Fed. Rep. Ger.  
SOURCE: WaBoLu-Berichte (1983), (1), 114 pp.  
CODEN: WBLBD6; ISSN: 0172-7702  
DOCUMENT TYPE: Journal  
LANGUAGE: German  
ED Entered STN: 12 May 1984  
AB The calculated COD values of 582 chemical compds. are compared to the COD  
values determined exptl. by the Cr2O72-, Cr2O72- and Ag, and MnO4- methods.  
IT 123-72-8 35326-33-1D, lactonized  
(COD of, exptl. and calculated values of)  
RN 123-72-8 HCAPLUS  
CN Butanal (CA INDEX NAME)

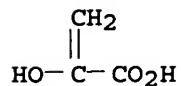


RN 35326-33-1 HCAPLUS  
CN 2-Propenoic acid, 2-hydroxy-, homopolymer (CA INDEX NAME)

CM 1

CRN 19071-34-2

CMF C3 H4 O3



CC 61-3 (Water)

IT 103-69-5 103-71-9, biological studies 103-72-0 103-84-4  
 104-12-1 104-40-5 105-54-4 105-60-2, biological studies  
 106-40-1 106-42-3, biological studies 106-44-5, biological studies  
 106-46-7 106-47-8, properties 106-48-9 106-50-3, properties  
 106-51-4, biological studies 106-89-8, biological studies 106-93-4  
 107-02-8, biological studies 107-05-1 107-06-2, biological studies  
 107-07-3, biological studies 107-11-9 107-13-1, biological studies  
 107-15-3, biological studies 107-19-7 107-21-1, biological studies  
 107-43-7 107-92-6, biological studies 107-95-9 108-05-4,  
 biological studies 108-10-1 108-20-3 108-38-3, biological  
 studies 108-39-4, biological studies 108-42-9 108-45-2,  
 properties 108-70-3 108-73-6 108-75-8 108-80-5 108-86-1,  
 properties 108-87-2 108-88-3, biological studies 108-90-7,  
 biological studies 108-91-8, biological studies 108-93-0,  
 properties 108-94-1, properties 108-95-2, properties 108-98-5,  
 properties 109-43-3 109-52-4, biological studies 109-57-9  
 109-73-9, biological studies 109-86-4 109-89-7, biological studies  
 109-97-7 109-99-9, properties 110-00-9 110-02-1 110-15-6,  
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 properties 110-91-8, properties 111-13-7 111-20-6, biological  
 studies 111-26-2 111-27-3, properties 111-42-2, biological  
 studies 111-46-6, biological studies 111-55-7 111-57-9  
 111-69-3 111-76-2 111-87-5, properties 112-27-6 112-30-1  
 112-31-2 112-34-5 112-80-1, biological studies 112-85-6  
 112-92-5 112-95-8 115-29-7 115-77-5, biological studies  
 117-81-7 118-74-1 118-91-2 118-92-3 119-33-5 119-53-9  
 119-61-9, biological studies 119-64-2 120-12-7, properties  
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 122-32-7 122-39-4, properties 122-66-7 122-79-2 123-01-3  
 123-30-8 123-31-9, properties 123-42-2 123-54-6, biological  
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 123-91-1, properties 124-04-9, biological studies 124-07-2,  
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 124-30-1 124-40-3, biological studies 126-73-8, biological studies  
 127-17-3, biological studies 127-18-4, biological studies 127-27-5  
 128-37-0, biological studies 128-97-2 129-00-0, properties  
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 134-81-6 135-01-3 135-19-3, biological studies 137-26-8  
 138-86-3 139-13-9 139-66-2 140-22-7 140-88-5 141-32-2  
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 151-50-8 151-56-4, properties 206-44-0 208-96-8 218-01-9  
 230-27-3 260-94-6 271-89-6 288-32-4, properties 288-88-0  
 291-64-5 298-12-4 302-17-0 302-72-7 306-94-5 309-00-2

313-72-4 320-51-4 330-55-2 333-20-0 334-48-5 352-93-2  
 357-57-3 367-12-4 371-41-5 392-56-3 420-04-2 431-03-8  
 452-77-7 462-06-6 463-40-1 473-90-5 489-84-9 495-40-9  
 495-69-2 496-11-7 499-75-2 512-69-6 514-10-3 517-60-2  
 530-57-4 534-22-5 534-52-1 538-71-6 540-84-1 540-88-5  
 541-73-1 542-59-6 542-75-6 544-12-7 544-76-3 548-62-9  
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 623-56-3

(COD of, exptl. and calculated values of)

IT 625-38-7 626-43-7 626-93-7 627-42-9 628-71-7 630-06-8  
 634-66-2 634-93-5 645-56-7 683-18-1 697-82-5 759-73-9  
 818-08-6 933-75-5 989-38-8 1077-16-3 1113-02-6 1398-61-4  
 1402-10-4 1570-64-5 1746-81-2 1762-95-4 1912-24-9 2028-63-9  
 2050-68-2 2217-07-4 2321-07-5 2353-45-9 2409-55-4 2435-53-2  
 2642-71-9 2667-20-1 2795-39-3 3147-45-3 3724-65-0 3766-60-7  
 4170-30-3 5138-90-9 5424-20-4 5460-09-3 5470-11-1 5875-45-6  
 6152-67-6 6638-79-5 7397-62-8 7440-44-0, properties 7704-34-9,  
 properties 7773-06-0 7803-57-8 8061-52-7 8062-15-5 9000-69-5  
 9002-86-2 9002-89-5 9004-32-4 9004-34-6, properties 9004-53-9  
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 9005-79-2, properties 9014-63-5 9016-45-9 10034-93-2  
 10039-54-0 10265-92-6 11067-82-6 13098-39-0 16368-91-5  
 24549-06-2 25153-40-6 25155-30-0 25322-68-3 26027-37-2  
 27216-04-2 30525-89-4 30915-64-1 34592-47-7 35326-33-1D  
 , lactonized 39156-41-7 53148-86-0 54480-49-8 88123-09-5  
 88123-10-8

(COD of, exptl. and calculated values of)

L74 ANSWER 25 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1983:199187 HCAPLUS

DOCUMENT NUMBER: 98:199187

ORIGINAL REFERENCE NO.: 98:30299a,30302a

TITLE: Porous anion-exchange resin

PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

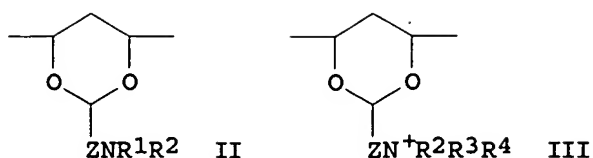
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 58011046            | A    | 19830121 | JP 1981-109092  | 19810713 |
|                        |      |          | <--             |          |
| JP 01060296            | B    | 19891221 |                 |          |
| PRIORITY APPLN. INFO.: |      |          | JP 1981-109092  | 19810713 |
|                        |      |          | <--             |          |

ED Entered STN: 12 May 1984

GI



- AB Porous crosslinked poly(vinyl alc.) (I) [9002-89-5] having sp. surface area  $\geq 0.5$  m<sup>2</sup>/g and(or) pore volume  $\geq 0.1$  mL/g and XZCHO (X = halogen, Z = alkylene) or its acetal react in the presence of acid and then with an amine to give an anion-exchange resin having II or III units. Alternatively, linear I, crosslinking agent, and XZCHO in aqueous salt solution are suspension-polymerized and treated with an amine. R<sup>1</sup>R<sup>2</sup>NZCHO or R<sup>2</sup>R<sup>3</sup>R<sup>4</sup>NZCHO (R<sup>1</sup> = H or alkyl; R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> = alkyl or hydroxyalkyl) may be used in the 1-step process. The resins have high exchange rate and capacity, and low swelling. Thus, I (Gohsenol NL-05) 20, NaCl 20, and CaCl<sub>2</sub>·2H<sub>2</sub>O 26 g in 173 mL H<sub>2</sub>O was stirred at 96° for 0.5 h to dissolve I; cooling to 20°, adding 8 mL 25% glutaraldehyde and 20 mL 1N HCl, dispersing in 500 mL C<sub>2</sub>H<sub>4</sub>Cl<sub>2</sub> containing 0.2 g cellulose acetate butyrate by stirring for 1 h, heating at 60° for 3.5 h under reflux to effect crosslinking, cooling, draining, mixing with 500 mL 10% NaCl, heating at 85° to remove C<sub>2</sub>H<sub>4</sub>Cl<sub>2</sub>, cooling, and washing gave crosslinked I (78% H<sub>2</sub>O, sp. surface area 47 m<sup>2</sup>/g). The latter 40 g (9 g dry basis), 55 mL dioxane, 90 g 40% ClCH<sub>2</sub>CHO, and 8 mL 1N HCl were stirred at 60° for 2.5 h and at 80° for 12 h under reflux; cooling, filtering, and washing with dioxane and H<sub>2</sub>O gave 14 g resin (dry basis) (89% yield). The product (18 g; 14 g dry basis), 15 mL dioxane, and 31 mL 50% aqueous Me<sub>2</sub>NH were stirred at 40° for 4.5 and at 80° for 25 h, cooled, filtered, washed, placed in a column, and washed in order with 2N HCl, 2N NaOH, and H<sub>2</sub>O. The H<sub>2</sub>O content was 51%, exchange capacity 1.91 mequiv/g, swelling 2.8 mL/g, sp. surface area 16.5 m<sup>2</sup>/g, and pore volume 0.1 mL/g.
- IC B01J041-12; C08F008-28; C08F008-32
- CC 37-3 (Plastics Manufacture and Processing)
- ST crosslinked polyvinyl alc anion exchanger
- IT Vinyl acetal polymers  
((dimethylamino)acetals, and quaternization products, as anion-exchange resins)
- IT Quaternary ammonium compounds, compounds  
(aldehydes, reaction products with crosslinked poly(vinyl alc.), anion exchangers)
- IT Anion exchangers  
(crosslinked poly(vinyl alc.) reaction products with aminoaldehydes)
- IT Crosslinking agents  
(glutaraldehyde, for poly(vinyl alc.), in anion exchanger manufacture)
- IT Aldehydes, reactions  
(amino, reaction products with crosslinked poly(vinyl alc.), anion exchangers)
- IT Aldehydes, reactions  
(halo, reaction of, with crosslinked poly(vinyl alc.) and amines)
- IT 107-20-0D, reaction products with crosslinked poly(vinyl alc.) and dimethylamine 124-40-3D, reaction products with crosslinked poly(vinyl alc.) and chloroacetaldehyde



9002-89-5D, glutaraldehyde-crosslinked, reaction products  
with chloroacetaldehyde and dimethylamine  
(anion exchangers)

IT 111-30-8

(poly(vinyl alc.) crosslinked by, reaction products with  
aminoaldehydes, anion exchangers)

L74 ANSWER 26 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1982:493666 HCAPLUS

DOCUMENT NUMBER: 97:93666

ORIGINAL REFERENCE NO.: 97:15625a,15628a

TITLE: Acetal group-containing polymers with improved heat  
resistance and adhesive properties

INVENTOR(S): Uspenskaya, Z. R.; Tyazhlo, N. I.; Arkhipova, I.  
N.; Trofimova, N. V.; Lavrova, N. V.; Knyazeva, T.  
V.; Kuz'mina, G. N.

PATENT ASSIGNEE(S): USSR

SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom.  
Obraztsy, Tovarnye Znaki 1982, (17), 121.  
CODEN: URXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Russian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE     | APPLICATION NO. | DATE     |
|------------|------|----------|-----------------|----------|
| -----      | ---- | -----    | -----           | -----    |
| SU 925966  | A1   | 19820507 | SU 1980-2951552 | 19800704 |

PRIORITY APPLN. INFO.:

SU 1980-2951552 19800704  
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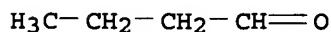
ED Entered STN: 12 May 1984

AB Acrylic acid (I)-vinyl alc. (II) copolymer-C2-6 alkanal-furfural (III)  
reaction products (mol. weight 20,000-55,000), having I content 1-5, II  
content 28-35, alkanal-based acetal-group content 48-65, and III-based  
acetal-group content 4-14 mol% exhibited good heat resistance and  
adhesive properties.

IT 123-72-8D, reaction products with acrylic acid-vinyl alc.  
copolymer and furfural 26299-60-5D, reaction products with  
alkanal and furfural  
(cyclic acetal group-containing, adhesives, heat-resistant)

RN 123-72-8 HCAPLUS

CN Butanal (CA INDEX NAME)



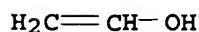
RN 26299-60-5 HCAPLUS

CN 2-Propenoic acid, polymer with ethenol (CA INDEX NAME)

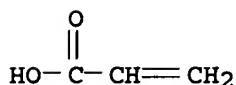
CM 1

CRN 557-75-5

CMF C2 H4 O



CM 2

CRN 79-10-7  
CMF C3 H4 O2

IC C08F216-06; C08F216-38; C08F220-06  
 CC 38-3 (Plastics Fabrication and Uses)  
 IT 66-25-1D, reaction products with acrylic acid-vinyl alc. copolymer and furfural 75-07-0D, reaction products with acrylic acid-vinyl alc. copolymer and furfural 98-01-1D, reaction products with acrylic acid-vinyl alc. copolymer and alkanals 110-62-3D, reaction products with acrylic acid-vinyl alc. copolymer and furfural 123-38-6D, reaction products with acrylic acid-vinyl alc. copolymer and furfural 123-72-8D, reaction products with acrylic acid-vinyl alc. copolymer and furfural 26299-60-5D, reaction products with alkanals and furfural  
 (cyclic acetal group-containing, adhesives, heat-resistant)

L74 ANSWER 27 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1982:202578 HCAPLUS

DOCUMENT NUMBER: 96:202578

ORIGINAL REFERENCE NO.: 96:33391a

TITLE: Alkaline battery containing a separator of a crosslinked copolymer of vinyl alcohol and unsaturated carboxylic acid

INVENTOR(S): Hsu, Li Chen; Philipp, Warren H.; Sheibley, Dean W.; Gonzalez-Sanabria, Olga D.

PATENT ASSIGNEE(S): United States National Aeronautics and Space Administration, USA

SOURCE: U. S. Pat. Appl., 12 pp. Avail. NTIS Order No. PAT-APPL-6-282 298.

CODEN: XAXXAV

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| US 282298              | A0   | 19820101 | US 1981-282298  | 19810710 |
|                        |      |          | <--             |          |
| US 4505998             | A    | 19850319 |                 |          |
| PRIORITY APPLN. INFO.: |      |          | US 1981-282298  | 19810710 |
|                        |      |          | <--             |          |

ED Entered STN: 12 May 1984

AB The title separator is insol. in water, has excellent zincate diffusion and O-barrier properties, and a low elec. resistivity. Crosslinking with a polyaldehyde is preferred. Thus, an acrylic acid-vinyl alc. copolymer [26299-60-5] was crosslinked by mixing 100 g of 5% aqueous copolymer with glutaraldehyde [111-30-8] 0.81, H<sub>2</sub>O 25, and Triton X 100 [9002-93-1] 2 g and heating to 100-120°. Battery separators in accordance with the invention have: an area resistivity of 1

$\Omega$ -cm<sup>2</sup>, volume resistivity of 20  $\Omega$ -cm, Zn dendrite penetration rate of  $3 + 10^{-4}$  cm/min, and zincate diffusion rate of  $2 + 10^{-6}$  mol/cm<sup>3</sup>-min.

IT 111-30-8  
 (crosslinking agents, for acrylic acid-vinyl alc. copolymer for alkaline-battery separator)  
 RN 111-30-8 HCAPLUS  
 CN Pentanedial (CA INDEX NAME)

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

IT 26299-60-5  
 (polyaldehyde-crosslinked, alkaline-battery separator)  
 RN 26299-60-5 HCAPLUS  
 CN 2-Propenoic acid, polymer with ethenol (CA INDEX NAME)  
 CM 1  
 CRN 557-75-5  
 CMF C2 H4 O

H<sub>2</sub>C=CH-OH

CM 2  
 CRN 79-10-7  
 CMF C3 H4 O2

$\begin{array}{c} \text{O} \\ || \\ \text{HO}-\text{C}-\text{CH}=\text{CH}_2 \end{array}$

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38  
 IT Electric resistance  
 (of acrylic acid-vinyl alc. polyaldehyde-crosslinked copolymers)  
 IT Batteries, secondary  
 (separators, alkaline-, acrylic acid-vinyl alc. polyaldehyde-crosslinked copolymer)  
 IT 9002-93-1  
 (acrylic acid-vinyl alc. polyaldehyde-crosslinked copolymers containing, for alkaline-battery separators)  
 IT 111-30-8 623-27-8 81752-41-2  
 (crosslinking agents, for acrylic acid-vinyl alc. copolymer for alkaline-battery separator)  
 IT 26299-60-5  
 (polyaldehyde-crosslinked, alkaline-battery separator)

L74 ANSWER 28 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1982:36102 HCAPLUS  
 DOCUMENT NUMBER: 96:36102  
 ORIGINAL REFERENCE NO.: 96:5988h,5989a

TITLE: Preparation of magnetic amine resins by polymer modification  
 AUTHOR(S): Eldridge, R. J.  
 CORPORATE SOURCE: Div. Chem. Technol., CSIRO, South Melbourne, 3205, Australia  
 SOURCE: Journal of Macromolecular Science, Chemistry (1982), A17(1), 167-73  
 CODEN: JMCHBD; ISSN: 0022-233X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ED Entered STN: 12 May 1984  
 AB Weak acid ion exchangers prepared by grafting acrylic acid on crosslinked poly(vinyl alc.) microbeads containing magnetic iron oxide were converted to strong or weak base resins by reaction with glycidyltrimethylammonium chloride or with epichlorohydrin and diethylamine, resp. Capacities  $\leq 2.6$  mequiv/g were obtained, but the products were susceptible to saponification. Similar resins prepared by grafting methacrylate esters hydrolyzed more slowly, indicating that hydrolysis occurred at the ester linkage.  
 IT 80450-83-5P  
 (graft, ion exchangers, preparation and alkaline stability of magnetic)  
 RN 80450-83-5 HCAPLUS  
 CN 2-Propenoic acid, polymer with ethenol and pentanedial, 2-hydroxy-3-(trimethylammonio)propyl ester, chloride (9CI) (CA INDEX NAME)

CM 1

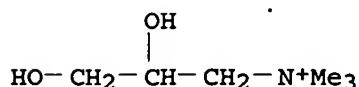
CRN 202605-70-7

CMF C6 H16 N O2 . x (C5 H8 O2 . C3 H4 O2 . C2 H4 O)x

CM 2

CRN 44814-66-6

CMF C6 H16 N O2



CM 3

CRN 202519-07-1

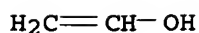
CMF (C5 H8 O2 . C3 H4 O2 . C2 H4 O)x

CCI PMS

CM 4

CRN 557-75-5

CMF C2 H4 O



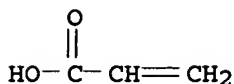
CM 5

CRN 111-30-8  
CMF C5 H8 O2

OHC-(CH<sub>2</sub>)<sub>3</sub>-CHO

CM 6

CRN 79-10-7  
CMF C3 H4 O2



CC 37-3 (Plastics Manufacture and Processing)  
IT 100-43-6DP, polymers, quaternized 106-89-8DP, reaction products with acrylic acid-vinyl alc. graft polymers and diethylamine 109-89-7DP, reaction products with acrylic acid-vinyl alc. graft polymers and epichlorohydrin 80388-87-0DP, reaction products with diethylamine and epichlorohydrin 80388-89-2P 80450-83-5P  
(graft, ion exchangers, preparation and alkaline stability of magnetic)

L74 ANSWER 29 OF 29 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1981:48292 HCAPLUS  
DOCUMENT NUMBER: 94:48292  
ORIGINAL REFERENCE NO.: 94:7893a,7896a  
TITLE: Thermosetting adhesives  
PATENT ASSIGNEE(S): Sekisui Chemical Co. Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF

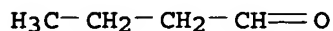
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE       |
|------------------------|------|----------|-----------------|------------|
| JP 55108443            | A    | 19800820 | JP 1979-16285   | 19790214   |
| JP 61050499            | B    | 19861105 |                 |            |
| PRIORITY APPLN. INFO.: |      |          | JP 1979-16285   | A 19790214 |

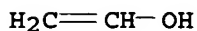
ED Entered STN: 12 May 1984

AB Compns. of vinyl acetal polymer containing 0.5-20 mol % CO<sub>2</sub>H groups or their salts and polyepoxides are useful as adhesives in a wide range of temperature. Thus, 326 g of 2.-:97.8 (molar) maleic acid-vinyl alc. copolymer in 3212 g H<sub>2</sub>O was treated with 187 g butanal in the presence of 58 g 35% HCl at 12° for 30 min, 174 g 35% HCl added, and the mixture warmed to 40°, stirred 2 h, neutralized with Na<sub>2</sub>CO<sub>3</sub>, and washed with 20 to give 471 g polymer (I). I (100 g) was dissolved in 500 g EtOCH<sub>2</sub>CH<sub>2</sub>OH, mixed with 5 g tetraethylene glycol diglycidyl ether [17626-93-6] and applied to degreased Fe plates. When 2 of those Fe plates were pressed together at 150° and 20 kg/cm<sup>2</sup> for 10 min; the adhesive strength of the bonding was 330 and 165 kg/cm<sup>2</sup>

at 20 and 150°, resp.  
 IT 123-72-8D, acetals with maleic acid-vinyl alc. copolymers  
 34229-80-6D, butyrals  
 (adhesives, **crosslinking** agents for)  
 RN 123-72-8 HCAPLUS  
 CN Butanal (CA INDEX NAME)

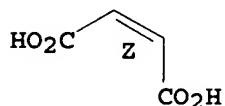


RN 34229-80-6 HCAPLUS  
 CN 2-Butenedioic acid (2Z)-, polymer with ethenol (CA INDEX NAME)  
 CM 1  
 CRN 557-75-5  
 CMF C2 H4 O



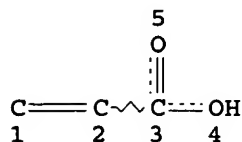
CM 2  
 CRN 110-16-7  
 CMF C4 H4 O4

Double bond geometry as shown.



IC C08L029-14; C08L029-14; C08L063-00  
 CC 36-6 (Plastics Manufacture and Processing)  
 ST vinyl acetal polymer adhesive; maleic acid ethenol copolymer; butyral  
 vinyl alc copolymer; polyepoxide **crosslinking** agent; heat  
 resistance adhesive  
 IT Adhesives  
 (maleic acid-vinyl alc. copolymer butyrals, **crosslinking**  
 agents for)  
 IT **Crosslinking** agents  
 (tetraethylene glycol diglycidyl ether, for maleic acid-vinyl alc.  
 copolymer butyrals, for adhesives)  
 IT 123-72-8D, acetals with maleic acid-vinyl alc. copolymers  
 34229-80-6D, butyrals  
 (adhesives, **crosslinking** agents for)  
 IT 17626-93-6  
 (**crosslinking** agents, for maleic acid-vinyl alc.  
 copolymer butyrals, for adhesives)

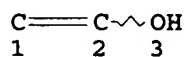
=> d que 175  
 L2 2 SEA FILE=REGISTRY ABB=ON PLU=ON (111-30-8/BI OR 51651-40-2/BI)  
 L7 STR



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 5

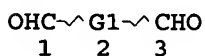
STEREO ATTRIBUTES: NONE  
 L9 SCR 2043  
 L11 STR



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE  
 L13 962 SEA FILE=REGISTRY SSS FUL L11 AND L7 AND L9  
 L15 STR



VAR G1=AK/CY  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE  
 L17 6 SEA FILE=REGISTRY SUB=L13 SSS FUL L15  
 L18 956 SEA FILE=REGISTRY ABB=ON PLU=ON L13 NOT L17  
 L19 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L17  
 L20 1924 SEA FILE=HCAPLUS ABB=ON PLU=ON L18  
 L21 12977 SEA FILE=HCAPLUS ABB=ON PLU=ON L2  
 L22 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND L21  
 L23 59532 SEA FILE=HCAPLUS ABB=ON PLU=ON ALDEHYDES/CV  
 L24 23508 SEA FILE=HCAPLUS ABB=ON PLU=ON "ALDEHYDES, REACTIONS"/CV

|     |        |                   |        |        |   |
|-----|--------|-------------------|--------|--------|---|
| L25 | 5      | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L20 AND (L23 OR L24)                                    |
| L26 | 23508  | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | "ALDEHYDES, REACTIONS"+PFT<br>,NT/CT                    |
| L27 | 425286 | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | ALDEHYDES+PFT,NT/CT                                     |
| L28 | 53     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L20 AND (L26 OR L27)                                    |
| L29 | 28     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L28 AND (CROSSLINK? OR<br>CROSS LINK?)                  |
| L30 | 30     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L25 OR L29  |
| L31 | 21     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L30 AND (1840-2003)/PRY,AY<br>,PY                       |
| L32 | 2      | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L19 AND (1840-2003)/PRY,AY<br>,PY                       |
| L33 | 7      | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L22 AND (1840-2003)/PRY,AY<br>,PY                       |
| L34 | 19020  | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | "POLYVINYL ACETALS"+PFT,NT<br>,CT                       |
| L35 | 23     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L34 AND L26   |
| L37 | 7      | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L35 AND (CROSSLINK? OR<br>CROSS LINK?)                  |
| L38 | 6      | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L37 AND (1840-2003)/PRY,AY<br>,PY                       |
| L39 | 15     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L32 OR L33 OR L38                                       |
| L40 | 15     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L31 NOT L39   |
| L47 | 448    | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L34 (L) (CROSSLINK? OR<br>CROSS LINK?)                  |
| L49 | 35     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L47 AND L21   |
| L50 | 29     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L49 AND (1840-2003)/PRY,AY<br>,PY                       |
| L51 | 10     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L50 AND POLYMER?/SC,SX                                  |
| L52 | 23     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L51 OR L39  |
| L53 | 15     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L40 NOT L52   |
| L54 | 1      | SEA FILE=REGISTRY | ABB=ON | PLU=ON | "GLUTARIC DIALDEHYDE"/CN                                |
| L55 | 1      | SEA FILE=REGISTRY | ABB=ON | PLU=ON | NONANEDIAL/CN   |
| L56 | 1      | SEA FILE=REGISTRY | ABB=ON | PLU=ON | BUTYRALDEHYDE/CN  |
| L58 | 26576  | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | (L54 OR L55 OR L56)                                     |
| L59 |        | QUE               | ABB=ON | PLU=ON | GLUTARIC DIALDEHYD? OR NONANEDIAL? O<br>R BUTYRALDEHYD? |
| L60 | 15     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L20 AND L58   |
| L61 | 3      | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L60 AND L59   |
| L62 | 15     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L60 OR L61  |
| L63 | 11     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L62 AND (CROSSLINK? OR<br>CROSS LINK?)                  |
| L64 | 15     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L62 OR L63  |
| L65 | 13     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L64 AND (1840-2003)/PRY,AY<br>,PY                       |
| L67 | 698    | SEA FILE=REGISTRY | ABB=ON | PLU=ON | 111-30-8/CRN  |
| L68 | 2      | SEA FILE=REGISTRY | ABB=ON | PLU=ON | 51651-40-2/CRN  |
| L69 | 263    | SEA FILE=REGISTRY | ABB=ON | PLU=ON | 123-72-8/CRN  |
| L70 | 7      | SEA FILE=REGISTRY | ABB=ON | PLU=ON | L13 AND ((L67 OR L68 OR<br>L69))                        |
| L71 | 9      | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L70   |
| L72 | 2      | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L71 AND (1840-2003)/PRY,AY<br>,PY                       |
| L73 | 15     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L65 OR L72  |
| L74 | 29     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L73 OR L52  |
| L75 | 12     | SEA FILE=HCAPLUS  | ABB=ON | PLU=ON | L53 NOT L74   |



=&gt; d 175 1-12 ibib ed abs hitstr hitind

L75 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:185229 HCAPLUS

DOCUMENT NUMBER: 136:249490

TITLE: Polymer, polymer microfiber, polymer nanofiber and applications including filter structures

INVENTOR(S): Chung, Hoo Y.; Hall, John R. B.; Gogins, Mark A.; Crofoot, Douglas G.; Weik, Thomas M.

PATENT ASSIGNEE(S): Donaldson Company, Inc., USA; Donaldson Co Inc

SOURCE: PCT Int. Appl., 92 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 7

PATENT INFORMATION:

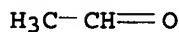
| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
|---|------|----------|------------------|----------|
| WO 2002020668   | A2   | 20020314 | WO 2001-US24948  | 20010809 |
| <--   |      |          |                  |          |
| WO 2002020668   | A3   | 20030724 |                  |          |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW |      |          |                  |          |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  |      |          |                  |          |
| US 20030106294  | A1   | 20030612 | US 2001-871583   | 20010531 |
| <--   |      |          |                  |          |
| US 6743273  | B2   | 20040601 |                  |          |
| CA 2419770  | A1   | 20020314 | CA 2001-2419770  | 20010809 |
| <--   |      |          |                  |          |
| AU 2001084771   | A    | 20020322 | AU 2001-84771    | 20010809 |
| <--   |      |          |                  |          |
| EP 1358272  | A2   | 20031105 | EP 2001-963852   | 20010809 |
| <--   |      |          |                  |          |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR   |      |          |                  |          |
| BR 2001013658   | A    | 20040120 | BR 2001-13658    | 20010809 |
| <--   |      |          |                  |          |
| JP 2004508447   | T    | 20040318 | JP 2002-525679   | 20010809 |
| <--   |      |          |                  |          |
| CN 1543487  | A    | 20041103 | CN 2001-815165   | 20010809 |
| <--   |      |          |                  |          |
| CN 1318512  | C    | 20070530 |                  |          |
| CN 1763274  | A    | 20060426 | CN 2005-10116222 | 20010809 |
| <--   |      |          |                  |          |
| CN 1765983  | A    | 20060503 | CN 2005-10116220 | 20010809 |
| <--   |      |          |                  |          |
| AU 2001284771   | B2   | 20061207 | AU 2001-284771   | 20010809 |
| <--   |      |          |                  |          |
| EP 1733776  | A2   | 20061220 | EP 2006-14221    | 20010809 |
| <--   |      |          |                  |          |
| EP 1733776  | A3   | 20071128 |                  |          |
| R: AT, BE, CH, CY, DE, DK, ES, FI; FR, GB, GR, IE, IT, LI, LU,  |      |          |                  |          |

|                |  |          |                  |          |
|----------------|--|----------|------------------|----------|
| RU 2300543     | MC, NL, PT, SE, TR<br>C2   | 20070610 | RU 2003-107850   | 20010809 |
|                |  |          | <--              |          |
| EP 1820553     | A2   | 20070822 | EP 2007-3080     | 20010809 |
|                |  |          | <--              |          |
| EP 1820553     | A3   | 20071121 |                  |          |
|                | R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU,<br>MC, NL, PT, SE, TR                         |          |                  |          |
| CN 101117736   | A  | 20080206 | CN 2007-10141957 | 20010809 |
|                |  |          | <--              |          |
| CN 101173383   | A  | 20080507 | CN 2007-10141959 | 20010809 |
|                |  |          | <--              |          |
| EP 1925352     | A1   | 20080528 | EP 2007-21897    | 20010809 |
|                |  |          | <--              |          |
|                | R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU,<br>MC, NL, PT, SE, TR                         |          |                  |          |
| EP 1795250     | A1   | 20070613 | EP 2007-100552   | 20010810 |
|                |  |          | <--              |          |
|                | R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU,<br>MC, NL, PT, SE, TR                         |          |                  |          |
| EP 1795249     | A1   | 20070613 | EP 2007-104779   | 20010810 |
|                |  |          | <--              |          |
|                | R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU,<br>MC, NL, PT, SE, TR                         |          |                  |          |
| CA 2419849     | A1   | 20020314 | CA 2001-2419849  | 20010821 |
|                |  |          | <--              |          |
| BR 2001013656  | A  | 20030701 | BR 2001-13656    | 20010821 |
|                |  |          | <--              |          |
| EP 1326697     | A2   | 20030716 | EP 2001-968055   | 20010821 |
|                |  |          | <--              |          |
| EP 1326697     | B1   | 20050615 |                  |          |
|                | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,<br>PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR |          |                  |          |
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| CN 1318121     | C  | 20070530 | CN 2001-817717   | 20010821 |
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| KR 820748      | B1   | 20080410 | KR 2003-703222   | 20030304 |
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| US 7318852             | B2 | 20080115 |                 |             |
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| IN 2007DN09873         | A  | 20080118 | IN 2007-DN9873  | 20071219    |
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| US 20080110822         | A1 | 20080515 | US 2008-8919    | 20080114    |
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|                        |    |          | WO 2001-US24948 | W 20010809  |
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 US 2003-676189      A3 20030930  
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 US 2003-741788      A1 20031219  
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 US 2004-894848      A1 20040719  
 US 2005-110625      A1 20050420  
 US 2006-398788      A1 20060406  
 US 2006-411577      A1 20060425

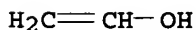
ED Entered STN: 15 Mar 2002  
 AB Polymer mixts. are conditioned or treated at elevated temps. so as to form a single chemical specie or an annealed blend are useful for formation of micro- and nanofibers for filters with improved efficiency and increased resistance to temperature and humidity. Typical fibers were manufactured by electrospinning blends of 50-80 parts SVP 651 (nylon 6-nylon 66-nylon 610 copolymer) and 20-50 parts GP 5137 (HCHO-phenol resin) and heating the fibers at, e.g., 90° for 12 h for the 65:35 blend.  
 IT 75-07-0D, Acetaldehyde, reaction products with alcs. and polyamides  
     (blends, fibers; polymer micro- or nanofibers for filters with improved heat and humidity resistance)  
 RN 75-07-0 HCAPLUS  
 CN Acetaldehyde (CA INDEX NAME)



IT 26299-60-5P, Acrylic acid-vinyl alcohol copolymer  
     (fibers; polymer micro- or nanofibers for filters with improved heat and humidity resistance)  
 RN 26299-60-5 HCAPLUS  
 CN 2-Propenoic acid, polymer with ethenol (CA INDEX NAME)

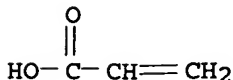
CM 1

CRN 557-75-5  
 CMF C2 H4 O



CM 2

CRN 79-10-7  
 CMF C3 H4 O2



IT 50-00-0DP, Formaldehyde, reaction products with nylon 66 and methanol  
 (polyamide blends, fibers; polymer micro- or nanofibers for filters with improved heat and humidity resistance)  
 RN 50-00-0 HCAPLUS  
 CN Formaldehyde (CA INDEX NAME)

H<sub>2</sub>C=O

IC ICM C08L101-00  
 ICS C08K005-13; D01F006-00; B01D024-00; C08L101-00; C08L065-00  
 CC 47-2 (Apparatus and Plant Equipment)  
 Section cross-reference(s): 40  
 ST polyamide phenolic resin **crosslinked** microfiber filter; nanofiber filter phenolic resin **crosslinked** polyamide; heat treatment polymer blend microfiber filter  
 IT Polyamide fibers, uses  
 (phenolic resin-**crosslinked**; polymer micro- or nanofibers for filters with improved heat and humidity resistance)  
 IT Phenolic resins, uses  
 (polyamide **crosslinked** by,; polymer micro- or nanofibers for filters with improved heat and humidity resistance)  
 IT Aldehydes, uses  
 (reaction products, with polyamides and alcs., blends, polymers; polymer micro- or nanofibers for filters with improved heat and humidity resistance)  
 IT Crosslinking  
 (thermal; of polymer blends for micro- or nanofibers for filters with improved heat and humidity resistance)  
 IT 64-17-5D, Ethanol, reaction products with aldehydes and polyamides 67-63-0, Isopropanol, uses 75-07-0D, Acetaldehyde, reaction products with alcs. and polyamides 112-92-5D, Stearyl alcohol, reaction products with aldehydes and polyamides 9002-85-1, Polyvinylidene chloride 9002-86-2, PVC 24937-79-9, Polyvinylidene fluoride 25038-59-9, PET polymer, uses  
 (blends, fibers; polymer micro- or nanofibers for filters with improved heat and humidity resistance)  
 IT 9006-67-1P, Formaldehyde-melamine-vinyl alcohol copolymer 26299-60-5P, Acrylic acid-vinyl alcohol copolymer  
 (fibers; polymer micro- or nanofibers for filters with improved heat and humidity resistance)  
 IT 50-00-0DP, Formaldehyde, reaction products with nylon 66 and methanol 67-56-1DP, Methanol, reaction products with nylon 66 and formaldehyde 32131-17-2DP, Nylon 66, reaction products with formaldehyde and methanol 38244-52-9DP, reaction products with formaldehyde and methanol  
 (polyamide blends, fibers; polymer micro- or nanofibers for filters with improved heat and humidity resistance)

L75 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:267428 HCAPLUS

DOCUMENT NUMBER: 130:326413

TITLE: Preparation of modified polyvinyl acetals and their solutions for transparent coatings

INVENTOR(S): Miyake, Yoshitaka; Kamiyama, Takashi

PATENT ASSIGNEE(S): Sekisui Chemical Co. Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 11116620            | A    | 19990427 | JP 1997-281966  | 19971015 |
| JP 3739192             | B2   | 20060125 |                 |          |
| PRIORITY APPLN. INFO.: |      |          | JP 1997-281966  | 19971015 |

ED Entered STN: 30 Apr 1999

AB Modified polyvinyl acetals having acetalization degree  $\leq 12$  mol% are prepared by reacting aqueous solns. of modified poly(vinyl alcs.) with aromatic aldehydes in the presence of 0.005-0.03% concentration of acid catalysts, where the modified poly(vinyl alcs.) contain hydrophilic groups of CO<sub>2</sub>M, SO<sub>3</sub>M, OSO<sub>3</sub>M, P(OM)<sub>2</sub>, and/or P(R)(O)OM (M = H, Li, Na, K; R = H, C<sub>1</sub>-20 alkyl), tertiary amines, and/or quaternary ammonium salts. The title solns. are manufactured by dissolving the modified polyvinyl acetals in 80/20-20/80 mixts. of H<sub>2</sub>O/alcs. Thus, itaconic acid-modified poly(vinyl alc.) (d.p. 2000, saponification degree 88 mol%) in H<sub>2</sub>O was reacted with benzaldehyde in the presence of 0.01% HCl to give a polymer precipitate, which was treated with aqueous NaOH, dried, and then dissolved in a 3:2 mixture of H<sub>2</sub>O/iso-PrOH. The obtained solution of the polymer (acetalization degree 8 mol%) was applied on a film and dried to give a coating with high transparency.

IT 34229-80-6DP, Maleic acid-vinyl alcohol copolymer, reaction products with aromatic aldehydes 68508-47-4DP, Itaconic acid-vinyl alcohol copolymer, reaction products with aromatic aldehydes (preparation of modified polyvinyl acetals and their aqueous alc. solns. for transparent coatings)

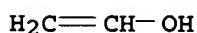
RN 34229-80-6 HCAPLUS

CN 2-Butenedioic acid (2Z)-, polymer with ethenol (CA INDEX NAME)

CM 1

CRN 557-75-5

CMF C2 H4 O

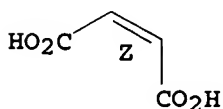


CM 2

CRN 110-16-7

CMF C4 H4 O4

Double bond geometry as shown.



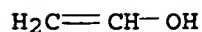
RN 68508-47-4 HCAPLUS

CN Butanedioic acid, 2-methylene-, polymer with ethenol (CA INDEX NAME)

CM 1

CRN 557-75-5

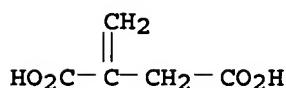
CMF C2 H4 O



CM 2

CRN 97-65-4

CMF C5 H6 O4



IC ICM C08F008-28

ICS C08F016-38; C08L029-14

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 35

IT Aldehydes, uses

(aromatic, cyclic acetals with modified poly(vinyl alc.); preparation of modified polyvinyl acetals and their aqueous alc. solns. for transparent coatings)

IT 100-52-7DP, Benzaldehyde, cyclic acetals with modified poly(vinyl alc.), uses 122-78-1DP, Phenylacetaldehyde, cyclic acetals with modified poly(vinyl alc.) 34229-80-6DP, Maleic acid-vinyl alcohol copolymer, reaction products with aromatic aldehydes 68508-47-4DP, Itaconic acid-vinyl alcohol copolymer, reaction products with aromatic aldehydes

(preparation of modified polyvinyl acetals and their aqueous alc. solns. for transparent coatings)

L75 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:568785 HCAPLUS

DOCUMENT NUMBER: 129:179120

ORIGINAL REFERENCE NO.: 129:36313a,36316a

TITLE: Fluid loss control agents, and compositions for cementing oil wells containing the agents

INVENTOR(S): Moulin, Eric

PATENT ASSIGNEE(S): Sofitech N.V., Belg.; Schlumberger Canada Limited; Compagnie Des Services Dowell Schlumberger

SOURCE: PCT Int. Appl., 13 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE     | APPLICATION NO. | DATE     |
|------------|------|----------|-----------------|----------|
| WO 9835918 | A1   | 19980820 | WO 1998-EP774   | 19980211 |

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DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP,  
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,  
 MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL,  
 TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW  
 RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES,  
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,  
 CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

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| FR 2759364                    | A1 | 19980814 | FR 1997-1848    | 19970212   |
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| EP 970026                     | A1 | 20000112 | EP 1998-908088  | 19980211   |
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| EP 970026                     | B1 | 20020605 |                 |            |
| R: BE, DE, DK, GB, IT, NL, IE |    |          |                 |            |
| NO 9903858                    | A  | 19990810 | NO 1999-3858    | 19990810   |
|                               |    |          | <--             |            |
| NO 324966                     | B1 | 20080114 |                 |            |
| US 6180689                    | B1 | 20010130 | US 1999-367363  | 19991026   |
|                               |    |          | <--             |            |
| PRIORITY APPLN. INFO.:        |    |          | FR 1997-1848    | A 19970212 |
|                               |    |          | <--             |            |
|                               |    |          | WO 1998-EP774   | W 19980211 |
|                               |    |          | <--             |            |

ED Entered STN: 07 Sep 1998

AB The fluid loss control agents, comprising a microgel obtained by **crosslinking** poly(vinyl alc.) (I), i.e., reacting I in solution with agents capable of condensing with  $\geq 2$  alc. functions at pH <10 and at concentration of the **crosslinking** agent with respect to the monomer units of the I 0.1-5 mol.%, addnl. contain a surfactant selected from polyvinylpyrrolidone, phenol-styryl derivs., N-C<12-alkylpyrrolidones, alkoxylated C $\leq$ 14-alc., and water-soluble copolymers of vinylpyrrolidone, e.g., vinyl acetate (vinyl content <50%). The microgel and the surfactant are compatible with a wide range of petroleum industry-type cement additives and produce gas-tight compns. A cement slurry, (d. 1.89 g/cm<sup>3</sup>) was produced from portland cement, liquid antifoaming agent 0.03, liquid retardant 0.04, polynaphthalenesulfoante-type dispersant 0.05, and **crosslinked** I-based fluid loss control agent 3.65 gal/42-lb sack of cement to which had been added polyvinylpyrrolidone surfactant, gave fluid loss at 85° 36, vs. 590 mL without the surfactant.

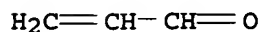
IT 107-02-8D, Acrolein, derivs., polymers with vinyl alc.

34229-80-6, Maleic acid-vinyl alcohol copolymer

(fluid loss control agents containing surfactant and; for mortar compns. for cementing of wells)

RN 107-02-8 HCAPLUS

CN 2-Propenal (CA INDEX NAME)



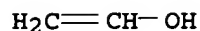
RN 34229-80-6 HCAPLUS

CN 2-Butenedioic acid (2Z)-, polymer with ethenol (CA INDEX NAME)

CM 1



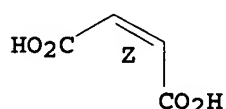
CRN 557-75-5  
CMF C2 H4 O



CM 2

CRN 110-16-7  
CMF C4 H4 O4

Double bond geometry as shown.



- IC ICM C04B024-26
- ICS C04B103-40
- CC 58-3 (Cement, Concrete, and Related Building Materials)
- ST plasticizer fluid loss control agent mortar; **crosslinking** polyvinyl alc plasticizer; surfactant **crosslinking** polyvinyl alc; polyvinylpyrrolidone surfactant; well cementing mortar
- IT Bentonite, uses  
(fluid loss control agents for mortar compns. containing **crosslinked** poly(vinyl alc.) and surfactant and)
- IT Plasticizers  
(fluid loss control agents; well-cementing with mortar containing **crosslinked** poly(vinyl alc.) and surfactant as)
- IT Cement (construction material)  
(portland; fluid loss control agents for mortar compns. containing **crosslinked** poly(vinyl alc.) and surfactant and)
- IT Aminoplasts  
(sulfonated, salts; fluid loss control agents for mortar compns. containing **crosslinked** poly(vinyl alc.) and surfactant and)
- IT Mortar  
(well-cementing with; **crosslinked** poly(vinyl alc.) and surfactant as fluid loss control agent in)
- IT 107-02-8D, Acrolein, derivs., polymers with vinyl alc.  
32630-65-2, Glutaraldehyde-vinyl alcohol copolymer 34229-80-6  
, Maleic acid-vinyl alcohol copolymer 112755-00-7, Oxalic acid-vinyl alcohol copolymer 211362-19-5 211362-21-9  
(fluid loss control agents containing surfactant and; for mortar compns. for cementing of wells)
- IT 9003-08-1D, Melamine, polymer with formaldehyde, sulfonated, salts  
9017-33-8D, Formaldehyde-naphthalenesulfonic acid copolymer, salts  
(fluid loss control agents for mortar compns. containing **crosslinked** poly(vinyl alc.) and surfactant and)
- IT 9003-39-8, Polyvinylpyrrolidone 25086-89-9, Vinyl acetate-vinylpyrrolidone copolymer  
(surfactant, fluid loss control agents containing **crosslinked** poly(vinyl alc.) and; for mortar compns. for cementing of wells)
- IT 108-95-2D, Phenol, styryl derivs., uses  
(surfactants, fluid loss control agents containing **crosslinked** poly(vinyl alc.) and; for mortar compns. for cementing of wells)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L75 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:444744 HCAPLUS

DOCUMENT NUMBER: 127:162527

ORIGINAL REFERENCE NO.: 127:31511a,31514a

TITLE: The effect of photo-crosslinking on the orientation stability of polyvinyl alcohol containing 4-nitro-4'-alkoxystilbene and cinnamyl pendent groups

AUTHOR(S): Feng, Zhiming; Lin, Weiping; Ye, Cheng

CORPORATE SOURCE: Organic Solid Lab., Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Chinese Journal of Polymer Science (1997), 15(2), 154-161

CODEN: CJPSEG; ISSN: 0256-7679

PUBLISHER: Science Press

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 17 Jul 1997

AB Crosslinking is one of the effective routes for improving the orientation stability of poled polymer films. Poly(vinyl alc.) containing 4-nitro-4'-alkoxystilbene and photocrosslinkable cinnamyl groups as side chains has been synthesized. The in-situ simultaneous photocrosslinking/poling of the synthesized polymer films has been performed. The second order nonlinear optical coefficient  $d_{33}$  of the poled film is 11 pm/V. The SHG measurements show that the break-over temperature of SHG signal increases after irradiation, and its orientation stability is doubled, compared with that of noncrosslinked samples.

IT 193486-68-9P (photocrosslinking effect on orientation stability of poly(vinyl alc.) containing 4-nitro-4'-alkoxystilbene and cinnamyl pendent groups)

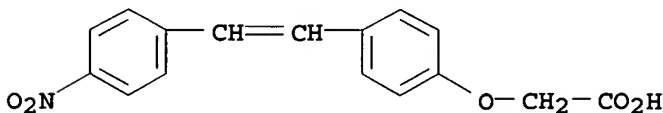
RN 193486-68-9 HCAPLUS

CN Ethenol, homopolymer, [4-[2-(4-nitrophenyl)ethenyl]phenoxy]acetate 3-phenyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 146794-15-2

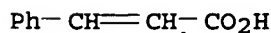
CMF C16 H13 N O5



CM 2

CRN 621-82-9

CMF C9 H8 O2

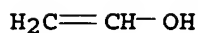


CM 3

CRN 9002-89-5  
 CMF (C2 H4 O)x  
 CCI PMS

CM 4

CRN 557-75-5  
 CMF C2 H4 O

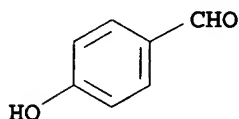


IT 123-08-0

(starting material for pendent group; photocrosslinking effect on orientation stability of poly(vinyl alc.) containing 4-nitro-4'-alkoxystilbene and cinnamyl pendent groups)

RN 123-08-0 HCAPLUS

CN Benzaldehyde, 4-hydroxy- (CA INDEX NAME)



CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 73

IT Crosslinking

(photochem.; photocrosslinking effect on orientation stability of poly(vinyl alc.) containing 4-nitro-4'-alkoxystilbene and cinnamyl pendent groups)

IT 193486-68-9P

(photocrosslinking effect on orientation stability of poly(vinyl alc.) containing 4-nitro-4'-alkoxystilbene and cinnamyl pendent groups)

IT 79-11-8, Chloroacetic acid, reactions 104-03-0, p-Nitrophenylacetic acid 123-08-0

(starting material for pendent group; photocrosslinking effect on orientation stability of poly(vinyl alc.) containing 4-nitro-4'-alkoxystilbene and cinnamyl pendent groups)

L75 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:332075 HCAPLUS

DOCUMENT NUMBER: 126:310459

ORIGINAL REFERENCE NO.: 126:60057a,60060a

TITLE: Thermal recording material containing poly(vinyl alcohol)-based polymer

INVENTOR(S): Washisu, Shintaro; Goto, Hidenori

PATENT ASSIGNEE(S): Fuji Photo Film Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE       |
|------------------------|------|----------|-----------------|------------|
| JP 09066666            | A    | 19970311 | JP 1996-13349   | 19960129   |
| US 5661101             | A    | 19970826 | US 1996-659435  | 19960606   |
| PRIORITY APPLN. INFO.: |      |          |                 |            |
|                        |      |          | JP 1995-151470  | A 19950619 |
|                        |      |          | JP 1996-13349   | A 19960129 |

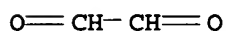
ED Entered STN: 24 May 1997

AB The recording material contains a poly(vinyl alc.)-based polymer with syndiotacticity (dyad convention)  $\geq 55$  mol% and saponification degree  $\geq 85$  mol% in (A) a coloring layer containing two colorless components which color by reaction each other and/or (B) an optionally laminated protecting layer containing a pigment and a binder. The material showed good water and chemical resistances and printability without sticking.

IT 107-22-2, Glyoxal  
(crosslinking agent; thermal recording material containing poly(vinyl alc.)-based polymer)

RN 107-22-2 HCAPLUS

CN Ethanediol (CA INDEX NAME)



IT 68508-47-4, Itaconic acid-vinyl alcohol copolymer  
(thermal recording material containing poly(vinyl alc.)-based polymer)

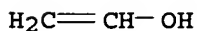
RN 68508-47-4 HCAPLUS

CN Butanedioic acid, 2-methylene-, polymer with ethenol (CA INDEX NAME)

CM 1

CRN 557-75-5

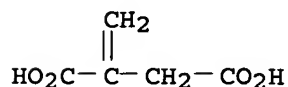
CMF C2 H4 O



CM 2

CRN 97-65-4

CMF C5 H6 O4



IC ICM B41M005-26

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 107-22-2, Glyoxal  
(crosslinking agent; thermal recording material containing

poly(vinyl alc.)-based polymer)  
 IT 9002-89-5, PVA 105 9002-89-5D, Poly(vinyl alcohol), saponified  
 25067-34-9, RS 110 (polymer) 68508-47-4, Itaconic acid-vinyl  
 alcohol copolymer 189233-63-4, RS 106 189233-65-6, RS 117H  
 (thermal recording material containing poly(vinyl alc.)-based polymer)

L75 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:484883 HCAPLUS  
 DOCUMENT NUMBER: 121:84883  
 ORIGINAL REFERENCE NO.: 121:15267a,15270a  
 TITLE: Poly(vinyl alcohol) packaging films for solid  
 detergents  
 INVENTOR(S): Nehashi, Tsutomu; Fujii, Yasuyuki; Sawada,  
 Michitaka  
 PATENT ASSIGNEE(S): Kao Corp, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|-------------|------|----------|-----------------|----------|
| -----       | ---- | -----    | -----           | -----    |
| JP 06065462 | A    | 19940308 | JP 1992-221388  | 19920820 |

PRIORITY APPLN. INFO.: JP 1992-221388 19920820  
 <--

ED Entered STN: 20 Aug 1994

AB The packaging films are made from a composition based on vinyl alc.  
 copolymers containing vinyl acetate and anionic vinyl monomer residues and  
 containing 0.005-2.0 phr of  $\geq 1$  substance selected from (1) C10  
 terpenic hydrocarbons, alcs., and aldehydes with  $\geq 1$  C-C double  
 bond, (2) C7-15 aromatic alcs. and aldehydes, and (3) C7-12 acetic acid  
 esters. A 25- $\mu$ m film was made by casting a composition based on a  
 copolymer of 96 mol% vinyl alc., 3 mol% acrylic acid and 1 mol% vinyl  
 acetate, and containing 0.1 phr additive A containing 60%  $\beta$ -pinene and  
 40% terpinolene, or 0.1 phr additive B containing 50% limonene, 20%  
 $\alpha$ -pinene and 30% benzyl acetate. The film did not have the  
 unpleasant smell of NaOAc when stored in a sealed container at -5,  
 +20, or +40° for 10 days.

IT 37768-21-1, Acrylic acid-vinyl acetate-vinyl alcohol copolymer  
 71745-18-1, Maleic acid-vinyl acetate-vinyl alcohol copolymer  
 94479-84-2, Itaconic acid-vinyl acetate-vinyl alcohol  
 copolymer

(compns. of, for detergent packaging films)

RN 37768-21-1 HCAPLUS

CN 2-Propenoic acid, polymer with ethenol and ethenyl acetate (CA INDEX  
 NAME)

CM 1

CRN 557-75-5

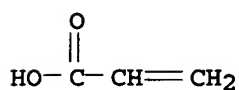
CMF C2 H4 O

H<sub>2</sub>C=CH-OH

CM 2

CRN 108-05-4  
CMF C4 H6 O2

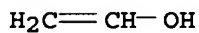
CM 3

CRN 79-10-7  
CMF C3 H4 O2

RN 71745-18-1 HCAPLUS

CN 2-Butenedioic acid (2Z)-, polymer with ethenol and ethenyl acetate  
(CA INDEX NAME)

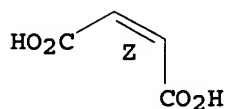
CM 1

CRN 557-75-5  
CMF C2 H4 O

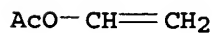
CM 2

CRN 110-16-7  
CMF C4 H4 O4

Double bond geometry as shown.



CM 3

CRN 108-05-4  
CMF C4 H6 O2

RN 94479-84-2 HCAPLUS

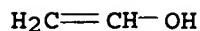
CN Butanedioic acid, 2-methylene-, polymer with ethenol and ethenyl

acetate (CA INDEX NAME)

CM 1

CRN 557-75-5

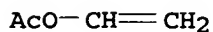
CMF C2 H4 O



CM 2

CRN 108-05-4

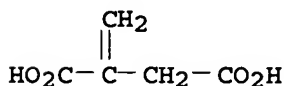
CMF C4 H6 O2



CM 3

CRN 97-65-4

CMF C5 H6 O4



IC ICM C08L029-04

ICS C08L029-04

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

IT Aldehydes, uses

(aryl, poly(vinyl alc.) compns. containing, for detergent packaging films)

IT 37768-21-1, Acrylic acid-vinyl acetate-vinyl alcohol copolymer

71745-18-1, Maleic acid-vinyl acetate-vinyl alcohol copolymer

94479-84-2, Itaconic acid-vinyl acetate-vinyl alcohol copolymer

(compns. of, for detergent packaging films)

L75 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1993:430153 HCAPLUS

DOCUMENT NUMBER: 119:30153

ORIGINAL REFERENCE NO.: 119:5545a,5548a

TITLE: Thermosensitive recording material with blocking, plasticizer and water resistance

INVENTOR(S): Miyauchi, Shinobu; Kurisu, Norio

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: U.S., 8 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE       |
|------------------------|------|----------|-----------------|------------|
| US 5194418             | A    | 19930316 | US 1991-749185  | 19910823   |
| JP 05301456            | A    | 19931116 | JP 1991-234169  | 19910821   |
| JP 3161774             | B2   | 20010425 |                 |            |
| PRIORITY APPLN. INFO.: |      |          | JP 1990-223802  | A 19900825 |

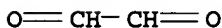
ED Entered STN: 24 Jul 1993

AB The title material comprises a support, a coloring layer of a leuco dye and a color developer, and overcoat layer which contains a crosslinked first resin, and a backcoat layer which contains a crosslinked second resin, different from the first. The water content of the thermosetting recording material should be  $\leq 7\%$  to prevent blocking problems. A paper support was coated with a coloring layer, a overcoat containing 20% dispersion of SiO<sub>2</sub> 10, 30% Zn stearate 1, 10% aqueous itaconic acid-modified polyvinyl alc. 40, 12.5% aqueous solution polyamide-epichlorohydrin 9, and water 40 parts, and on the backside with a coating of 20% Al(OH)<sub>3</sub> 15, 30% dispersion of Zn stearate 1, 10% aqueous solution polyvinyl alc. (saponified  $\geq 97\%$ ) 40, 10% glyoxal 2, and water 54 parts to give the recording material.

IT 107-22-2, Glyoxal  
(backcoat containing, for antiblocking plasticizer- and water-resistant thermal recording material)

RN 107-22-2 HCAPLUS

CN Ethanediol (CA INDEX NAME)



IT 81544-50-5  
(overcoat containing, crosslinkable, for antiblocking plasticizer- and water-resistant thermal recording material)

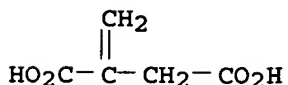
RN 81544-50-5 HCAPLUS

CN Ethenol, homopolymer, methylenebutanedioate (CA INDEX NAME)

CM 1

CRN 97-65-4

CMF C5 H6 O4



CM 2

CRN 9002-89-5

CMF (C2 H4 O)x

CCI PMS

CM 3

CRN 557-75-5



CMF C2 H4 O



IC ICM B41M005-40

INCL 503226000

CC 42-11 (Coatings, Inks, and Related Products)

Section cross-reference(s): 74

ST antiblocking thermal recording material; water resistant thermal recording material; polyvinyl alc itaconate **crosslinkable** overcoat; saponid polyvinyl alc **crosslinkable** backcoatIT 9003-20-7D, Polyvinyl acetate, saponified 9012-76-4, Chitosan (backcoat containing, **crosslinkable**, for antiblocking plasticizer- and water-resistant thermal recording material)

IT 107-22-2, Glyoxal 9003-08-1, Melamine resin 32535-84-5, Ammonium zirconyl carbonate 52234-82-9

(backcoat containing, for antiblocking plasticizer- and water-resistant thermal recording material)

IT 81544-50-5

(overcoat containing, **crosslinkable**, for antiblocking plasticizer- and water-resistant thermal recording material)

L75 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:472651 HCAPLUS

DOCUMENT NUMBER: 115:72651

ORIGINAL REFERENCE NO.: 115:12577a,12580a

TITLE: Triplet energy migration in solid films of photoreactive polymers

AUTHOR(S): Farid, Samir; Daly, Robert C.; Moody, Roger E.; Huang, Wei Yu; Reiser, Arnost

CORPORATE SOURCE: Corp. Res. Lab., Eastman Kodak Co., Rochester, NY, 14650, USA

SOURCE: Macromolecules (1991), 24(14), 4041-6

CODEN: MAMOBX; ISSN: 0024-9297

DOCUMENT TYPE: Journal

LANGUAGE: English

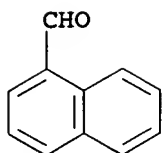
ED Entered STN: 23 Aug 1991

AB Triplet energy migration in photoreactive **crosslinkable** polymer matrixes, e.g., unsatd. esters of poly(vinyl alc.), was investigated. By viewing the solid polymer as an ensemble of reactant sites, the encounter statistics of the excitation quanta with reactive sites could be derived. The migration range of the quanta in the solid matrix could then be estimated from the effect of triplet quenchers on the photosensitivity of the material. The migration range strongly depended on the structure of the photosensitive moiety, and the average number of jumps varied from <10 to >100. The role of triplet migration in determining the sensitivity of photoreactive polymer films was discussed.

IT 66-77-3, 1-Naphthalenecarboxaldehyde (condensation of, with malonic acid)

RN 66-77-3 HCAPLUS

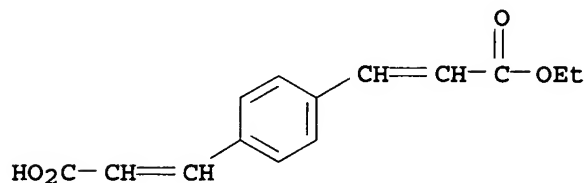
CN 1-Naphthalenecarboxaldehyde (CA INDEX NAME)



IT 135143-94-1  
 (photocrosslinking of, triplet energy migration in relation to)  
 RN 135143-94-1 HCAPLUS  
 CN Ethenol, homopolymer, 3-[4-(3-ethoxy-3-oxo-1-propenyl)phenyl]-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 32445-29-7  
 CMF C14 H14 O4

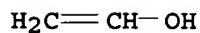


CM 2

CRN 9002-89-5  
 CMF (C2 H4 O)x  
 CCI PMS

CM 3

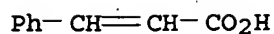
CRN 557-75-5  
 CMF C2 H4 O



IT 9050-06-0P, Poly(vinyl alcohol) cinnamate 135143-95-2P  
 , Poly(vinyl alcohol) 3-(1-naphthyl)propenoate  
 (preparation and photocrosslinking of, triplet energy migration in relation to)  
 RN 9050-06-0 HCAPLUS  
 CN Ethenol, homopolymer, 3-phenyl-2-propenoate (CA INDEX NAME)

CM 1

CRN 621-82-9  
 CMF C9 H8 O2

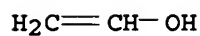


CM 2

CRN 9002-89-5  
 CMF (C2 H4 O)x  
 CCI PMS

CM 3

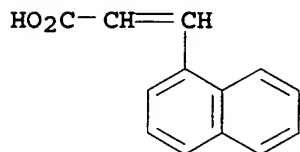
CRN 557-75-5  
 CMF C2 H4 O



RN 135143-95-2 HCAPLUS  
 CN Ethenol, homopolymer, 3-(1-naphthalenyl)-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 13026-12-5  
 CMF C13 H10 O2

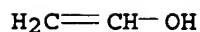


CM 2

CRN 9002-89-5  
 CMF (C2 H4 O)x  
 CCI PMS

CM 3

CRN 557-75-5  
 CMF C2 H4 O



CC 36-5 (Physical Properties of Synthetic High Polymers)  
 Section cross-reference(s): 37, 74

IT **Crosslinking**  
 (photochem., of poly(vinyl alc.) unsatd. esters and unsatd. polyester-ethers, triplet energy migration and photosensitivity in relation to)

IT 66-77-3, 1-Naphthalenecarboxaldehyde  
(condensation of, with malonic acid)  
IT 135143-94-1  
(photocrosslinking of, triplet energy migration in relation to)  
IT 9050-06-0P, Poly(vinyl alcohol) cinnamate 53710-66-0P  
58608-19-8P 83216-61-9P 135143-95-2P, Poly(vinyl alcohol)  
3-(1-naphthyl)propenoate  
(preparation and photocrosslinking of, triplet energy migration in  
relation to)

L75 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:39516 HCAPLUS

DOCUMENT NUMBER: 108:39516

ORIGINAL REFERENCE NO.: 108:6611a,6614a

TITLE: Chemical modification of cotton and poly(vinyl  
alcohol) fiber by graft copolymerization and  
crosslinking

AUTHOR(S): Tsuji, Waichiro; Hiro, Miki; Nakao, Tokie

CORPORATE SOURCE: Mukogawa Women's Univ., Nishinomiya, Japan

SOURCE: Mukogawa Joshi Daigaku Kiyo, Hifuku-hen (  
1986), 34, C59-C68

CODEN: MDHEDZ; ISSN: 0387-2092

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

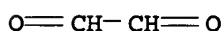
ED Entered STN: 06 Feb 1988

AB Poly(vinyl alc.) fabric and cotton fabric were grafted with  
acrylamide, acrylonitrile, and acrylic acid, using cerium ammonium  
nitrate as catalyst, and crosslinked with HCHO and glyoxal.  
The grafting decreased the strength and crease recovery. Addition of  
Na2SO4 or NaOAc in the treating bath decreased the decrease in  
strength after grafting.

IT 107-22-2, Glyoxal  
(crosslinking of acrylic-grafted cotton and vinal fiber  
by)

RN 107-22-2 HCAPLUS

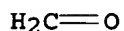
CN Ethanediol (CA INDEX NAME)



IT 50-00-0, Formaldehyde, reactions  
(crosslinking of acrylic-grafted cotton and vinal fiber  
by)

RN 50-00-0 HCAPLUS

CN Formaldehyde (CA INDEX NAME)



IT 109526-82-1, Acrylic acid-vinyl alcohol graft copolymer  
(fiber)

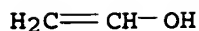
RN 109526-82-1 HCAPLUS

CN 2-Propenoic acid, polymer with ethenol, graft (CA INDEX NAME)

CM 1

CRN 557-75-5

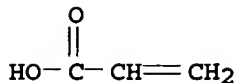
CMF C2 H4 O



CM 2

CRN 79-10-7

CMF C3 H4 O2



- CC 40-9 (Textiles and Fibers)
- ST cotton fiber grafting **crosslinking**; vinal fiber grafting **crosslinking**; acrylic grafting cotton vinal fiber; polymn graft cotton vinal fiber; **crosslinking** grafted cotton vinal fiber
- IT Vinal fibers  
(acrylic-grafted, **crosslinking** of)
- IT **Crosslinking**  
(of acrylic-grafted cotton and vinal fibers with formaldehyde and glyoxal)
- IT Textiles  
(cotton, acrylic-grafted, **crosslinking** of)
- IT 107-22-2, Glyoxal  
(**crosslinking** of acrylic-grafted cotton and vinal fiber by)
- IT 50-00-0, Formaldehyde, reactions  
(**crosslinking** of acrylic-grafted cotton and vinal fiber by)
- IT 79-06-1D, Acrylamide, polymers with cotton, graft 79-10-7D, Acrylic acid, polymers with cotton, graft 107-13-1D, Acrylonitrile, polymers with cotton, graft 107709-18-2, Acrylonitrile-vinyl alcohol graft copolymer 108968-01-0, Acrylamide-vinyl alcohol graft copolymer 109526-82-1, Acrylic acid-vinyl alcohol graft copolymer (fiber)
- IT 127-09-3, Sodium acetate 7757-82-6, Sodium sulfate, uses and miscellaneous  
(in easy-care finishing of **crosslinked**, acrylic-grafted cotton and vinal fiber)
- IT 9002-89-5  
(vinal fibers, acrylic-grafted, **crosslinking** of)

L75 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1983:163919 HCAPLUS

DOCUMENT NUMBER: 98:163919

ORIGINAL REFERENCE NO.: 98:24843a,24846a

TITLE: Polyvinyl alcohol membranes as alkaline battery separators

AUTHOR(S): Sheibley, Dean W.; Gonzalez-Sanabria, Olga; Manzo, Michelle

CORPORATE SOURCE: Lewis Res. Cent., Natl. Aeronaut. and Space Adm., Cleveland, OH, USA

SOURCE: NASA Tech. Memo. (1982), NASA-TM-82961, E-1378, NAS 1.15:82961, 23 pp. Avail.: NTIS

From: Sci. Tech. Aerosp. Rep. 1983, 21(1), Abstr.  
 No. N83-10135  
 CODEN: NATMA4; ISSN: 0499-9320

DOCUMENT TYPE:

Report

LANGUAGE:

English

ED Entered STN: 12 May 1984

AB polyvinyl alc. (PVA) [9002-89-5] **crosslinked** with aldehyde reagents yields membranes that demonstrate properties that make them suitable for use as alkaline battery separators. Film properties can be controlled by the choice of **crosslinker**, **crosslink** d., and the method of **crosslinking**. Three methods of **crosslinking** and their effects on film properties are discussed. Film properties can also be modified by using a acrylic acid-vinyl alc. copolymer [26299-60-5] as the base for the separator and **crosslinking** it similarly to the PVA. Fillers can be incorporated into the films to further modify film properties. Results of separator screening tests and battery tests for several variations of PVA films are discussed.

IT 26299-60-5

(aldehyde-crosslinked, as alkaline battery separators)

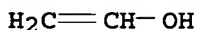
RN 26299-60-5 HCAPLUS

CN 2-Propenoic acid, polymer with ethenol (CA INDEX NAME)

CM 1

CRN 557-75-5

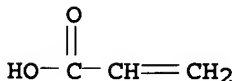
CMF C2 H4 O



CM 2

CRN 79-10-7

CMF C3 H4 O2



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38

IT Aldehydes, uses and miscellaneous

(battery separators from polyvinyl alc. **crosslinked** with, alkaline)

IT Batteries, secondary

(separators, alkaline, aldehyde-crosslinked polyvinyl alc. as)

IT 9002-89-5 26299-60-5

(aldehyde-crosslinked, as alkaline battery separators)

L75 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1976:60743 HCAPLUS

DOCUMENT NUMBER: 84:60743

ORIGINAL REFERENCE NO.: 84:10009a,10012a

TITLE: Light-sensitive polymers

INVENTOR(S): Pacifici, James G.  
 PATENT ASSIGNEE(S): Eastman Kodak Co., USA  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE     | APPLICATION NO. | DATE     |
|------------|------|----------|-----------------|----------|
| US 3912697 | A    | 19751014 | US 1973-355117  | 19730427 |

PRIORITY APPLN. INFO.: US 1973-355117 19730427  
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ED Entered STN: 12 May 1984

AB Vinol 523[poly(vinylalc.)](I) was modified by a substituted vinylbenzoyl chloride photosensitizer to give a composition which was masked and irradiated to form **crosslinked** image regions. Typically, Me 4-[2-(5,6-dimethyl-2-benzoxazolyl)vinyl]benzoate [2702-44-5] was refluxed in aqueous HOAc-H<sub>2</sub>SO<sub>4</sub> and the acid [57956-18-0] formed was treated with SOCl<sub>2</sub> and Na<sub>2</sub>CO<sub>3</sub> to give 4-[2-(5,6-dimethyl-2-benzoxazolyl)vinyl]benzoyl chloride [38218-04-1] which was used to esterify I. Modified I cast on rolled steel was exposed to a Hg lamp through a neg. mask to give products with insol. exposed portions.

IT 58057-04-8

(light-sensitive)

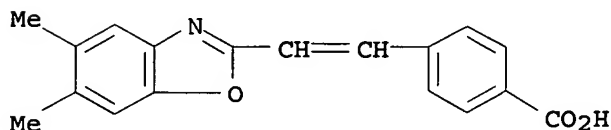
RN 58057-04-8 HCAPLUS

CN Ethenol, homopolymer, acetate 4-[2-(5,6-dimethyl-2-benzoxazolyl)ethenyl]benzoate 3-phenyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 57956-18-0

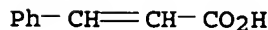
CMF C18 H15 N O3



CM 2

CRN 621-82-9

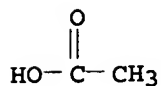
CMF C9 H8 O2



CM 3

CRN 64-19-7

CMF C2 H4 O2

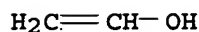


CM 4

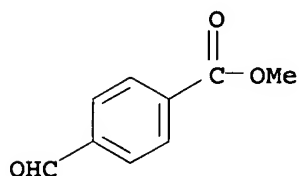
CRN 9002-89-5  
 CMF (C2 H4 O)x  
 CCI PMS

CM 5

CRN 557-75-5  
 CMF C2 H4 O



IT 1571-08-0  
 (reaction of, with methylbenzothiazole)  
 RN 1571-08-0 HCAPLUS  
 CN Benzoic acid, 4-formyl-, methyl ester (CA INDEX NAME)



IC C08F; G03C  
 INCL 260079500NV  
 CC 37-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 74  
 IT **Crosslinking**  
 (of poly(vinyl alc.) (benzoxazolylylvinyl)benzoates, by light)  
 IT 58057-03-7 58057-04-8 58057-05-9 58057-06-0  
 (light-sensitive)  
 IT 1571-08-0  
 (reaction of, with methylbenzothiazole)

L75 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1973:419676 HCAPLUS  
 DOCUMENT NUMBER: 79:19676  
 ORIGINAL REFERENCE NO.: 79:3167a,3170a  
 TITLE: Light-sensitive polymeric esters  
 INVENTOR(S): Gates, Allen Peter  
 PATENT ASSIGNEE(S): Howson-Algraphy Ltd.  
 SOURCE: Ger. Offen., 30 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German



FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

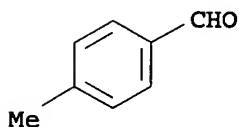
| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE       |
|------------------------|------|----------|-----------------|------------|
| DE 2251828             | A1   | 19730426 | DE 1972-2251828 | 19721021   |
|                        |      |          | <--             |            |
| DE 2251828             | C2   | 19830127 |                 |            |
| ZA 7207353             | A    | 19730627 | ZA 1972-7353    | 19721016   |
|                        |      |          | <--             |            |
| CA 986638              | A1   | 19760330 | CA 1972-154519  | 19721018   |
|                        |      |          | <--             |            |
| FI 57183               | B    | 19800229 | FI 1972-2886    | 19721018   |
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| FI 57183               | C    | 19800610 |                 |            |
| AU 7247952             | A    | 19740426 | AU 1972-47952   | 19721019   |
|                        |      |          | <--             |            |
| BE 790383              | A1   | 19730215 | BE 1972-123337  | 19721020   |
|                        |      |          | <--             |            |
| NL 7214212             | A    | 19730425 | NL 1972-14212   | 19721020   |
|                        |      |          | <--             |            |
| NL 189626              | B    | 19930104 |                 |            |
| NL 189626              | C    | 19930601 |                 |            |
| FR 2156906             | A1   | 19730601 | FR 1972-37376   | 19721020   |
|                        |      |          | <--             |            |
| FR 2156906             | B1   | 19790316 |                 |            |
| IT 975318              | B    | 19740720 | IT 1972-70312   | 19721020   |
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| CH 558400              | A    | 19750131 | CH 1972-15391   | 19721020   |
|                        |      |          | <--             |            |
| SU 493984              | A3   | 19751128 | SU 1972-1845296 | 19721020   |
|                        |      |          | <--             |            |
| SE 393621              | B    | 19770516 | SE 1972-13552   | 19721020   |
|                        |      |          | <--             |            |
| NO 137104              | B    | 19770919 | NO 1972-3785    | 19721020   |
|                        |      |          | <--             |            |
| IN 137774              | A1   | 19750920 | IN 1972-1703    | 19721021   |
|                        |      |          | <--             |            |
| ES 408109              | A1   | 19751001 | ES 1972-408109  | 19721021   |
|                        |      |          | <--             |            |
| JP 48050801            | A    | 19730717 | JP 1972-107658  | 19721023   |
|                        |      |          | <--             |            |
| JP 57008126            | B    | 19820215 |                 |            |
| DD 102222              | A5   | 19731212 | DD 1972-162944  | 19721023   |
|                        |      |          | <--             |            |
| AT 322977              | B    | 19750625 | AT 1972-9036    | 19721023   |
|                        |      |          | <--             |            |
| CS 171174              | B2   | 19761029 | CS 1972-7107    | 19721023   |
|                        |      |          | <--             |            |
| PRIORITY APPLN. INFO.: |      |          | GB 1971-49297   | A 19711022 |
|                        |      |          | <--             |            |

ED Entered STN: 12 May 1984

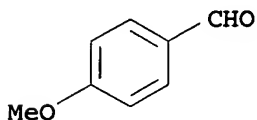
AB The title compns., useful in photoresists having good color change and increased sensitivity, contain azido derivs. of unsatd. acids. Thus, heating 2.42 g p-azido-2-chlorocinnamaldehyde [22736-82-9], 5.4 g cyanoacetic acid [372-09-8], and 50 ml HOAc 2 hr at 80.deg. gives 1.4 g 5-(p-azidophenyl)-5-chloro-2-cyano-2,4-pentadienoic acid (I) [40742-07-2], refluxing 4 g of which with 25 ml SOCl<sub>2</sub> 6 hr gives the acid chloride (II). Stirring 2.93 g II, 2.00 g Epikote 1007, 30 ml dioxane, and 1.0 ml pyridine 4 hr at 50.deg. gives 3.41 g bisphenol

A-epichlorohydrin copolymer 5-(p-azidophenyl)-5-chloro-2-cyano-2,4-pentadienoate (III) [40738-67-8]. Exposing an 0.5 g/m<sup>2</sup> coating of III on Al to a pulsed 400 W Xe lamp for 30 sec at 0.65 m gives a deep yellow-brown image which can be developed with a **crosslinking** agent-containing glycol ester.

IT 104-87-0 123-11-5  
(nitration of)  
RN 104-87-0 HCAPLUS  
CN Benzaldehyde, 4-methyl- (CA INDEX NAME)



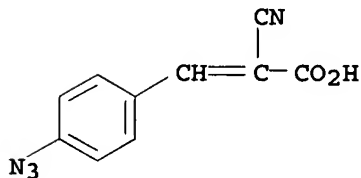
RN 123-11-5 HCAPLUS  
CN Benzaldehyde, 4-methoxy- (CA INDEX NAME)



IT 39434-68-9  
(photoresist)  
RN 39434-68-9 HCAPLUS  
CN Ethenol, homopolymer, 3-(4-azidophenyl)-2-cyano-2-propenoate (9CI)  
(CA INDEX NAME)

CM 1

CRN 42460-60-6  
CMF C10 H6 N4 O2

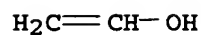


CM 2

CRN 9002-89-5  
CMF (C2 H4 O)x  
CCI PMS

CM 3

CRN 557-75-5  
CMF C2 H4 O



IC C07C; C08F; G03C  
CC 36-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 25, 74  
IT 104-87-0 123-11-5  
(nitration of)  
IT 25068-38-6D, Epikote 1009, esters with azidocinnamic acid derivs.  
39434-68-9 39464-37-4 39464-38-5 39464-39-6 39464-40-9  
39464-41-0 39464-42-1 39464-43-2 39464-44-3 39464-45-4  
42460-60-6D, 2-Propenoic acid, 3-(4-azidophenyl)-2-cyano-, esters with  
epoxy resins  
(photoresist)

=> d his nofile

(FILE 'HOME' ENTERED AT 11:05:26 ON 16 DEC 2008)

FILE 'HCAPLUS' ENTERED AT 11:05:33 ON 16 DEC 2008

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        SEL RN

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L3      1 SEA ABB=ON  PLU=ON  "POLYVINYL ACETALS"/CN
        E VINYL ACETAL/CN
L4      1 SEA ABB=ON  PLU=ON  "VINYL ACETAL POLYMERS"/CN
L5      STR
L6      STR
L7      STR L6
L8      0 SEA SSS SAM L5 AND L7
L9      SCR 2043
L10     7 SEA SSS SAM L5 AND L7 AND L9
L11     STR L5
L12     7 SEA SSS SAM L11 AND L7 AND L9
L13     962 SEA SSS FUL L11 AND L7 AND L9
        SAV L13 BER022/A
L14     32 SEA ABB=ON  PLU=ON  L13 AND ALDEH?
L15     STR
L16     0 SEA SUB=L13 SSS SAM L15
L17     6 SEA SUB=L13 SSS FUL L15
        SAV L17 BER022A/A
L18     956 SEA ABB=ON  PLU=ON  L13 NOT L17

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FILE 'HCAPLUS' ENTERED AT 11:29:29 ON 16 DEC 2008

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L19     7 SEA ABB=ON  PLU=ON  L17
L20     1924 SEA ABB=ON  PLU=ON  L18
L21     12977 SEA ABB=ON  PLU=ON  L2
L22     9 SEA ABB=ON  PLU=ON  L20 AND L21
        E ALDEHYDES/CV
L23     59532 SEA ABB=ON  PLU=ON  ALDEHYDES/CV
        E ALDEHYDES, REACTIONS/CV
L24     23508 SEA ABB=ON  PLU=ON  "ALDEHYDES, REACTIONS"/CV
L25     5 SEA ABB=ON  PLU=ON  L20 AND (L23 OR L24)
        E ALDEHYDES, REACTIONS/CT
L26     23508 SEA ABB=ON  PLU=ON  "ALDEHYDES, REACTIONS"+PFT,NT/CT
        E ALDEHYDES/CT
L27     425286 SEA ABB=ON  PLU=ON  ALDEHYDES+PFT,NT/CT
L28     53 SEA ABB=ON  PLU=ON  L20 AND (L26 OR L27)
L29     28 SEA ABB=ON  PLU=ON  L28 AND (CROSSLINK? OR CROSS LINK?)
L30     30 SEA ABB=ON  PLU=ON  L25 OR L29
L31     21 SEA ABB=ON  PLU=ON  L30 AND (1840-2003)/PRY,AY,PY
L32     2 SEA ABB=ON  PLU=ON  L19 AND (1840-2003)/PRY,AY,PY
L33     7 SEA ABB=ON  PLU=ON  L22 AND (1840-2003)/PRY,AY,PY
        E POLYVINYL ACETALS/CT
L34     19020 SEA ABB=ON  PLU=ON  "POLYVINYL ACETALS"+PFT,NT/CT
L35     23 SEA ABB=ON  PLU=ON  L34 AND L26
L36     1 SEA ABB=ON  PLU=ON  L35 AND L1
L37     7 SEA ABB=ON  PLU=ON  L35 AND (CROSSLINK? OR CROSS LINK?)
L38     6 SEA ABB=ON  PLU=ON  L37 AND (1840-2003)/PRY,AY,PY
L39     15 SEA ABB=ON  PLU=ON  L32 OR L33 OR L38
L40     15 SEA ABB=ON  PLU=ON  L31 NOT L39

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L41 3 SEA ABB=ON PLU=ON L34 AND L26 AND L21  
 L42 123 SEA ABB=ON PLU=ON L34 AND L21  
 L43 85 SEA ABB=ON PLU=ON L42 AND (CROSSLINK? OR CROSS LINK?)  
 L44 65 SEA ABB=ON PLU=ON L43 AND (PLASTIC? OR POLYMER?)/SC,SX  
 L45 55 SEA ABB=ON PLU=ON L44 AND (1840-2003)/PRY,AY,PY  
 L46 1 SEA ABB=ON PLU=ON L45 AND L1  
 L47 448 SEA ABB=ON PLU=ON L34 (L) (CROSSLINK? OR CROSS LINK?)  
 L48 3 SEA ABB=ON PLU=ON L47 AND L26  
 L49 35 SEA ABB=ON PLU=ON L47 AND L21  
 L50 29 SEA ABB=ON PLU=ON L49 AND (1840-2003)/PRY,AY,PY  
 L51 10 SEA ABB=ON PLU=ON L50 AND POLYMER?/SC,SX  
 L52 23 SEA ABB=ON PLU=ON L51 OR L39  
 L53 15 SEA ABB=ON PLU=ON L40 NOT L52

FILE 'REGISTRY' ENTERED AT 14:05:35 ON 16 DEC 2008

E GLUTARIC DIALDEHYDE/CN  
 L54 1 SEA ABB=ON PLU=ON "GLUTARIC DIALDEHYDE"/CN  
 E NONANEDIAL/CN  
 L55 1 SEA ABB=ON PLU=ON NONANEDIAL/CN  
 E BUTYRALDEHYDE/CN  
 L56 1 SEA ABB=ON PLU=ON BUTYRALDEHYDE/CN  
 L57 QUE ABB=ON PLU=ON (L54 OR L55 OR L56)

FILE 'HCAPLUS' ENTERED AT 14:07:58 ON 16 DEC 2008

L58 26576 SEA ABB=ON PLU=ON (L54 OR L55 OR L56)  
 L59 QUE ABB=ON PLU=ON GLUTARIC DIALDEHYD? OR NONANEDIAL? OR  
 BUTYRALDEHYD?  
 L60 15 SEA ABB=ON PLU=ON L20 AND L58  
 L61 3 SEA ABB=ON PLU=ON L60 AND L59  
 L62 15 SEA ABB=ON PLU=ON L60 OR L61  
 D 15 IBIB HITSTR  
 L63 11 SEA ABB=ON PLU=ON L62 AND (CROSSLINK? OR CROSS LINK?)  
 L64 15 SEA ABB=ON PLU=ON L62 OR L63  
 L65 13 SEA ABB=ON PLU=ON L64 AND (1840-2003)/PRY,AY,PY

FILE 'REGISTRY' ENTERED AT 14:16:14 ON 16 DEC 2008

L66 1 SEA ABB=ON PLU=ON 111-30-8/RN  
 L67 698 SEA ABB=ON PLU=ON 111-30-8/CRN  
 L68 2 SEA ABB=ON PLU=ON 51651-40-2/CRN  
 L69 263 SEA ABB=ON PLU=ON 123-72-8/CRN  
 L70 7 SEA ABB=ON PLU=ON L13 AND ((L67 OR L68 OR L69))

FILE 'HCAPLUS' ENTERED AT 14:17:36 ON 16 DEC 2008

L71 9 SEA ABB=ON PLU=ON L70  
 L72 2 SEA ABB=ON PLU=ON L71 AND (1840-2003)/PRY,AY,PY

FILE 'HCAPLUS' ENTERED AT 14:20:13 ON 16 DEC 2008

L73 15 SEA ABB=ON PLU=ON L65 OR L72  
 L74 29 SEA ABB=ON PLU=ON L73 OR L52  
 L75 12 SEA ABB=ON PLU=ON L53 NOT L74